

DOCUMENT RESUME

ED 118 109

TR 003 011

AUTHOR	Cavert, C. Edward, Comp.
TITLE	<u>Designing Diversity '75; Conference Proceedings,</u> National Conference on Open Learning and Nontraditional Study (2nd, Washington, D.C., June 17-19, 1975).
INSTITUTION	University of Mid-America, Lincoln, Nebr.
SPONS AGENCY	Federal Interagency Committee on Education, Washington, D.C.; Joint Council on Educational Telecommunication, Washington, D.C.
PUB DATE	75
NOTE	411p.; Not available in hard copy due to marginal reproducibility of original
AVAILABLE FROM	University of Mid-America, P.O. Box 82006, Lincoln, Nebraska 68501 (\$7.50; Cassette tape recordings of most sessions available for \$5.75 per session)
EDRS PRICE	MF-\$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS	Alternative Schools; Communication Satellites; Computers; Conference Reports; Continuous Learning; Cost Effectiveness; *Curriculum; Delivery Systems; Educational Change; Educational Finance; *Educational Innovation; *Educational Research; *Educational Technology; Elementary Secondary Education; Evaluation; Government Role; Libraries; Minority Groups; *Open Education; Post Secondary Education; Telecommunication; Television

ABSTRACT

In 1975, a national conference was held to discuss the current status of open learning and nontraditional studies, and to discuss plans for the future. This report contains some 75 essays classified into the following categories: (1) general issues, (2) management and financing patterns, (3) academic and curricular patterns, (4) communications technology and delivery patterns, and (5) research and evaluation patterns. A list of conference participants is also provided. (EMH)

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Conference Proceedings

Compiled by
C. Edward Cavert
Conference Director

DESIGNING DIVERSITY '75

Second National Conference on
Open Learning and Nontraditional Study.

Washington, D.C.
June 17-19, 1975

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PREFACE

Designing Diversity '75, the second National Conference on Open Learning and Nontraditional Study, was convened June 17-19, 1975, in Washington, D.C. Nearly 400 educators from 39 states and seven countries were given both the opportunity and the challenge to arrive at informed decisions about the growth of open learning systems and programs of nontraditional study.

The conference was planned as an outgrowth of a 1973 recommendation of the Commission on Non-Traditional Study and the first annual National Conference on Open Learning in Higher Education, convened in 1974 at Lincoln, Nebraska.

In 1973, the Commission on Non-Traditional Study concluded two years of intensive efforts and issued its recommendations in *Diversity by Design*. It called for a progress report to the nation on educational diversity in 1975. The Commission expressed the hope that those recommendations could be examined anew and the progress of nontraditional education measured.

In 1974, the State University of Nebraska (SUN) and the Great Plains National Instructional Television Library held the first National Conference on Open Learning in Higher Education, giving particular attention to the potential educational benefits of new communications technologies. It was hoped that through this 1974 conference, an increasing number of American adult learners could be served through operational technology-based open learning systems.

In 1975, the second National Conference on Open Learning and Non-traditional Study provided a timely opportunity to merge these two significant events and to continue the dialogue about new trends and new ideas in technology-based learning systems and in programs of nontraditional study.

What follows in these proceedings are the thoughts, observations, concerns, and comments of nearly 80 people who shared their experience and expertise with the conference participants. This anthology of thought at this stage of the development of open learning systems in the United States will have not only immediate pragmatic value but great historic significance as well.

C. Edward Cavert
University of Mid-America
Conference Director

INTRODUCTION

In the two years since the Commission on Non-Traditional Study issued its recommendations, we have seen a flurry of activity in the areas of open learning and nontraditional study. Institutions across the country have begun their own programs of nontraditional study, some modest in scale, some extremely ambitious and far-reaching. This 1975 conference was convened to review national progress toward meeting the Commission's recommendations, to assess the current status of open learning and nontraditional study, and to discuss plans for the future.

Open learning is a complex issue, both intricate and educationally demanding. Institutions will be required to develop plans with deliberation. The growth of open learning is bringing new opportunities for nontraditional study at all levels, from *Sesame Street* to university courses. Communications options are growing, too, with such technologies as satellites, computers, and cable generating new prospects for the future. While there may be pitfalls, the sharing of information and experience both through conferences such as this, and through more informal means, should help to overcome some of the problems as well as to fully realize some of the potentials.

There is a continuing task of exploring the ways in which available and emerging communications tools may extend our reach and enhance our effectiveness in providing new educational opportunities to all who seek them. Toward the objective of sharing experience, evaluation results, and plans with all who are seriously interested in nontraditional instruction and open learning, the University of Mid-America and the Joint Council on Educational Telecommunications were pleased to co-host this second national conference.

Frank W. Norwood
Executive Secretary
Joint Council on Educational
Telecommunications

Jack McBride
Executive Vice-President
University of Mid-America

TABLE OF CONTENTS

GENERAL SESSIONS	PART 1
Sir Walter Perry	Page 11
A National Commitment: An International Concept	
Samuel B. Gould	Page 19
Charge to the Conference	
Harold L. Hodgkinson	Page 27
Technology and Education	
Virginia Y. Trotter	Page 57
Communications Technology: Extending the Reach of Universities to People	
James O'Hara	Page 63
Congress Looks at Open Learning	
D. B. Varner	Page 67
An American Perspective on Open Learning and Nontraditional Study	
Samuel Baskin	Page 75
Open Learning in American Higher Education: Some Perspectives, Some Concerns and Issues Ahead	
Abdol-Rahim Ahmadi	Page 81
An International Perspective on Open Learning and Nontraditional Study	
Richmond Postgate	Page 87
Systems and Problems in Post-Secondary Education	
Max Rowe	Page 91
An International Perspective on Open Learning and Nontraditional Study	
Frederick deW. Bolman	Page 101
Opening Higher Learning	
MANAGEMENT AND FINANCING PATTERNS	PART 2
Jack McBride	Page 111
Characteristics of a Regional Open Learning University	
Dean Jamison	Page 119
Cost-Effectiveness in Open Learning and Nontraditional Study	
Stephen Dresch	Page 123
Cost-Effectiveness in Social-Historical Context	
Steven Klees	Page 127
Post-Secondary Open Learning Systems: Cost-Effectiveness and Benefit Considerations	
Ernest Palola	Page 131
Program Effectiveness and Related Costs (PERC): An Overview	
Norman Kurland	Page 143
Lifelong Learning Investigations: A Report from Two States	
Richard Peterson	Page 149
Lifelong Learning Investigations: A Report from Two States	

Travis Linn	Community College Consortia for Open Learning	Page 155
Franklin G. Bouwsma	Community College Consortia for Open Learning	Page 159
Barry Shorthouse	The Open University	Page 163
Betty Jo Mayeske	Can the Open University of the United Kingdom Be Used as a Model for U.S. Systems?	Page 169
Herbert Levine	Paid Educational Leaves: Implications for Work and Education in America	Page 173
Virginia Smith	Federal Role in Assisting Institutions to Change	Page 179
Myron Wolowitz	Management and Financing Patterns	Page 183
Michael Neben	Government Concerns and Policies: Current and Future	Page 187
James Stengle	Government Concerns and Policies: Current and Future	Page 189
Justine Rodriguez	Government Concerns and Policies: Current and Future	Page 191

ACADEMIC AND CURRICULAR PATTERNS

PART 3

William Bondeson	Open Learning: Curricula, Courses and Credibility	Page 197
Arthur Chickering	Adult Development—Implications for Higher Education	Page 203
John Valley	Lifelong Learning: What Has Been the Real Response	Page 221
René Cárdenas	The Lonely Learners: Minorities in Open Learning Programs	Page 229
Lorraine Misiaszek	Concerns of and About Minority Audiences and Women in Open Learning	Page 233
Betty Ward	Concerns of and About Minority Audiences and Women in Open Learning	Page 237
Mary Ellen Verheyden-Hilliard	Concerns of and About Minority Audiences and Women in Open Learning	Page 241
Fred Nelson	New Curricular Patterns to Meet Adult Needs: Different Strokes for Different Folks	Page 245
Jules Pagano	New Curricular Patterns to Meet Adult Needs: Different Strokes for Different Folks	Page 251
Vivian Guilfoy	Career Counseling and New Learning Options for Adults: A Necessary Connection	Page 259

John Summerskill	The Educational Passport	Page 263
James Kraft	Federal Agencies Look at Open Learning	Page 267
Erik McWilliams	Federal Agencies Look at Open Learning	Page 271
Gerald Weekman	Federal Agencies Look at Open Learning	Page 273
William Harley	Discriminating Between Open Learning, Open University, and Nontraditional Learning	Page 275

COMMUNICATIONS TECHNOLOGY AND DELIVERY PATTERNS PART 4

John Witherspoon	State of the Art: Current Educational Uses of Public Broadcasting in Higher Education	Page 283
Lloyd Morrisett	Cable Television and Open Learning	Page 289
Richard B. Marsten	Satellite Broadcasting: Capabilities for Public Service	Page 295
Harold E. Morse	Satellites for Education	Page 305
Harold Wigren	The National Education Association Satellite Experience	Page 311
M. Roy Schwarz	Satellite Communication for Medical Education and Health Care Delivery in the Pacific Northwest and Alaska	Page 315
H. Rex Lee	Today's Planning for Tomorrow's Needs	Page 319
Paul Merrill	The Role of Computer Technology in an Open Learning Environment	Page 323
William Atchison	Computers: The Emerging Technology in Open Learning	Page 327
Martin Chamberlain	The Newspaper: A Medium for Open Learning	Page 331
G. Woodson Howe	The Newspaper: A Medium for Open Learning	Page 335
Robert Wedgeworth	Libraries and Nontraditional Study	Page 339
Jose Orlando Toro	Libraries and Nontraditional Study	Page 343
Henry Shearouse, Jr.	Libraries and Nontraditional Study	Page 347
Martin Chamberlain	Ascent of Man - A Course of Study	Page 351
Franklin G. Bouwsma	Ascent of Man - A Course of Study	Page 355

Richard L. Kelly	Ascent of Man—A Course of Study	Page 359
Douglas Bodwell	Public Broadcasting and Education	Page 361
Jack Mitchell	Public Broadcasting and Education	Page 365
Rhea Sikes	Public Broadcasting and Education	Page 369
Joseph Aguayo	The Future of Public Broadcasting: Where Do We Go From Here?	Page 373
George L. Hall	Statewide Telecommunications Systems for Open Learning	Page 377
Kenneth Warren	Some Realities of Course Acquisition	Page 383
David L. Bell	Exchange of Courseware on a National Level	Page 387
James Thompson	Exchange of Courseware on a National Level	Page 391
August DeJong	Exchange of Courseware on a National Level	Page 395

RESEARCH AND EVALUATION PATTERNS PART 5

Dennis Gooler	Criteria for Determining Success in Open Learning Systems	Page 401
Jerome E. Lord	Research, the Future, and Open Learning	Page 413
George Nolfi	Design for Open Learning: Implementing a Network of Existing Educational Resources	Page 423
Edward Palmer	Use of Formative Evaluation in Course Development	Page 443
Jack Lindquist and John Noonan	Faculty Development for Open Learning and Nontraditional Study	Page 457

PARTICIPANTS PART 6

General Sessions

A broad perspective of the emerging fields of open learning systems and nontraditional study programs was given at the conference by speakers at the general sessions.



Sir Walter Laing Macdonald Perry OBE, MD, DSc, FRCPE, FRSE, has been vice-chancellor of The Open University ever since it was established in 1969. Previously he was vice-principal of Edinburgh University. He is a member of the British Committee of Vice-Chancellors and Principals and in 1973 chaired a joint UGC/CNAA Committee on the proposed Diploma of Higher Education. He was knighted in 1974. In the same year, he gave the Rede Lecture, "Higher Education for Adults—Where More Means Better." He was educated at Ayr Academy and Dundee High School before attending St. Andrews University where he studied medicine, graduated MB, ChB in 1943, and took his MD in 1948. Sir Walter is a member of the British Pharmacopoeia Commission and secretary of the British Pharmacological Society. He has been associated with The Open University since before it received its Royal Charter in 1969.

A National Commitment: An International Concept

**Sir Walter Perry
The Open University in the United Kingdom**

I am honored to have been invited to deliver the keynote address. Now, a keynote is struck at the beginning of a program so that the members of the choir will all sing in tune. But in *Designing Diversity* it seems probable that, whatever the keynote may be, each member of the choir will, while starting at the same pitch, embark upon a different song...with a very high probability that the noise that results will be discordant.

If I may stretch the musical analogy a little further, I propose to strike two chords this morning. The first—namely, the diversity of open learning systems and nontraditional programs of study—is the dominant one; the second—namely The Open University as a national commitment and an international concept—represents, I would claim, the tonic.

Designing Diversity! Well, why would this be our aim? Presumably because we have to try to satisfy such varying needs. And what are these needs, and why have they not been satisfied by traditional methods? These are very simple questions. But, when we try to formulate answers we raise some very profound problems. Let me look first at the purposes of traditional education at the higher education level. What were the needs that it was created to meet? I think that, originally, there were three basic purposes for the universities:

1. Universities had a primary function of preserving and nurturing scholarship. These communities of scholars acted as bulwarks in the defense of all that was best in literature, art, philosophy, and history against the vagaries of political and public opinion. Within the communities young people with a bent for scholarship were trained in the image of their elders to maintain and to extend the scope of human knowledge and wisdom. Let us not, in seeking to extend and diversify the provision of higher education, ever forget that there is still a need—and perhaps in our troubled times an increasing need—to maintain this particular function. Whatever new patterns of provision of higher education may emerge, we must ensure that what Ashby has referred to as "The thin, clear stream of excellence" is not lost in "The turbulent river of the mediocre."

To excel means to outshine and must, therefore, be the preserve of the small minority. To be less than excellent is no disgrace; it is the fate of most of us. Thus, society must also nurture the mediocre, the less than excellent, not only because society depends upon them, but also because they, too, must be given the opportunity of self-fulfillment, of taking their education to the limits of their ability. It seems to me that the traditional university educational pattern, while succeeding in its first very necessary function of preserving and nurturing scholarship, failed—almost because of that success—to care for the needs of those who were not scholars. What we need to do is to avoid the opposite. We must not, in providing opportunities of higher education for the non-scholars, fail to provide for the small minority of scholars. That, indeed, is one fundamental reason for designing diversity.

2. Traditional universities had a second primary function, namely to provide vocational training. I sometimes think that this is conveniently forgotten. The medieval universities in Europe, apart from preserving scholarship, existed primarily to train priests, lawyers, and doctors—a highly vocational program by modern standards. Yet they are frequently referred to as institutions which were strongholds of a liberal education. The reason for this confusion is, I think, clear. In those days all the written authorities in religion, law and medicine existed in the original Latin and Greek. Vocational education, therefore, had to be based on a classical education. In consequence, until comparatively recent times, a classical education came to be regarded as the liberal foundation upon which everything else was based, and vocational education came to be looked on as something that was somehow less worthy. Nowadays, when it is at least arguable that science and technology are as indispensable to a truly educated man

as "specialized" or "vocational" rather than "liberal", this is another problem that we have to face in designing diversity: we must try to ensure that a comprehension of scientific principle becomes a part of the armamentarium of the educated citizen.

3. The third function of the traditional university was to provide a sort of finishing school for the children of the wealthy and nobly born. Whether or not they were intellectually capable of higher education they were entered into it because it was "the done thing". This gave rise to—or perhaps merely sustained—a form of elitist society. Today birth and wealth are less important than merit in gaining entrance to universities, but the elitism remains in varying degrees in all countries and the struggle against elitism was, and still is, a major factor in promoting open learning systems and programs of nontraditional study.

Thus, all three of the functions of the traditional systems of higher education can be seen to influence, quite profoundly, the problems that face us now. How far, then, have the traditional systems of higher education themselves tried to design diversity—tried to adapt to the new needs of society?

The first and most obvious way in which the traditional universities have changed is, of course, in the explosive increase in the number of students to which they cater. This increase has, of itself, two inevitable consequences.

1. To go to college or university gradually becomes not the exceptional thing to do, but the normal thing to do—the pattern. Consequently, most students are no longer scholars by nature, however able they may be.
2. Despite the increase in the number of colleges and universities, each individual institution becomes larger so that the community of scholars changes in nature and becomes more impersonal, more institutionalized.

These are the inevitable consequences, but there have been other consequences, not inevitable, but very real. Although curricula have increased in number and variety there has been a strong tendency for the pattern of education in any discipline to remain unchanged. Teachers have tended to produce pupils in their own image.

The reproductive instinct is very strong in academic as in social life. Thus, mathematicians want to train more mathematicians, even when most of the students don't want to become mathematicians. Even when they accept logically and rationally that the needs are different—that they should be, for example, trying to inculcate some understanding of what mathematics is about and can offer, in students who will end up in wholly different occupations—this rational intention is often overlaid by a deep emotional desire to turn them into mathematicians. And this characteristic is not confined to mathematics. It is equally true of all disciplines and, in my view, it is one of the most potent causes of student unrest, and their charges that courses are not "relevant" to their needs.

Then again, there is another consequence. Since the pattern is now to go on from school to university or college, the duration of initial education has been extended. It is no longer just the natural scholars who continue studying. Most of our able youth spend most of their active and creative years not, as they should, in contributing to society, but in studying how to do so. Some,

indeed, are middle-aged before they can make any contribution! I do not believe, even in these days of explosive growth in the sum of human knowledge, that this is really necessary. Most initial education is too slow, too detailed, or just plain unnecessary. And we are, in consequence, faced with the problem of reducing the duration of initial higher education while expanding the number of those exposed to it. Factors such as these have led to the concepts of "continuing" or "recurrent" education. Here, too, we must design diversity.

It is often very difficult for existing institutions to break away from traditional methods of study. And we have seen in recent years a number of wholly new institutions set up by imaginative people trying to create a new pattern. They are usually motivated by all the sorts of reasons that I have been describing; but they often have, in addition, the motive of utilizing the new technologies of the mass media of communication. Let me turn for a few moments to look at such experiments, of which The Open University is one. It seems to me that they fall into two very distinct categories, although both may be called open learning systems.

1. The first category has, as its primary aim, the provision of higher education, tailored to suit the needs of the individual student. It is "open" in the sense that it does not demand that the students fall into a particular pattern, either of background information and training or of aim or goal. It may give credit for any kind of life experience. A curriculum of further study is devised for each student separately, to suit his background and his goal. Into this category fall the University Without Walls and the Empire State College.
2. The second category has, as its primary aim, the provision of higher education towards a limited number of predetermined goals to as many people as may wish to achieve these particular goals. It makes no particular demand for background information or training. It is "open" in the sense that anyone may enter it and may make his own selection from among those courses of study which are available.

It thus depends upon a choice by the institution of those courses which, statistically, will appeal to a large number of students. There can be no attempt to offer courses tailor-made to meet the needs of an individual student. Into this category falls The Open University. Its crucial features are:

- A. It has no entrance requirements.
- B. It is designed for adults over 21 in employment.
- C. It calls for part-time home-based learning.
- D. It makes no compromise on standards of final performance, and its degree is equivalent to that of any traditional university.

I am not going to attempt any detailed description of The Open University. Many of you know a great deal about it, and certain features will be described in later sessions of this conference. But I do want to say something of our national commitment to it and of its possible influence as an international concept.

Perhaps the most important thing about the national commitment in Britain to The Open University was the fact that it began as a political, and not as an academic, commitment. There had, of course, been a great deal of academic discussion about new open learning systems but it was only in

1963 when Harold Wilson, then leader of the Opposition Labor Party, made a public statement of his intent, when he gained power, to start an open university, that the idea began to be seriously considered. Even then—and, indeed, even through the first three years of the Labor Government of which he became Prime Minister in 1964, he had many battles to fight. For, to start with, it was only his **personal** commitment. First he had to persuade his own party of the validity of the idea. This took many months, and it was only in the 1965 election that the Party Manifesto included any mention of an open university. It was only in 1967 that an academic planning committee was created; of itself, it represented only a commitment in principle. Yet, when the report of the planning committee was published, in January 1969, it was accepted in the House of Commons by the Minister of Education, it was **not** accepted by the Conservative Opposition.

It was also true that in 1969, in the academic world in Britain, the idea was viewed with skepticism and ridicule. Thus there were still, in 1969, formidable battles to be fought, both politically and academically, before we could claim a really **national** commitment to The Open University. Indeed, I am quite certain, looking back, that there was no way of **obtaining** such a national commitment **before** the university began. It was, in other words, necessary for a party political decision to be taken to proceed with the establishment of the university. The decision had to be taken as a gamble, for there was no proof that the university would work. And that gamble had to be backed by hard cash **before** there were any courses or any students to show for it. It was, indeed, little short of a miracle that we ever got off the ground!

The basic criteria for the university I have already mentioned. In practice, their fulfillment called for a **very** large capital investment. There were, of course, great economies of **scale** to offset against this investment. For example, it costs a great deal of money to make a **good** television program, but it costs just the same amount for one student as it does for a million students. Then again, it was hard to write correspondence material that was readily usable by adults working in isolation and wholly unused to study since they had left school often many years earlier. We found that this called for teamwork by many academics and technologists, and that a team worked much more slowly than its slowest member. One year of effort by an academic produces only about one credit hour of student teaching material. It is by no means uncommon for a professor to be sent away by his colleagues on a course team to rewrite his material for the fourth, fifth, or sixth time. It is not because he is not an expert—it is because he is not explaining it in the way that they believe to be necessary. This implies a loss of academic freedom, but helps to subdue that instinct to reproduce scholars to which I referred. For these kinds of reasons, then, we felt bound to spend a great deal of money on course development. We spent nothing at all on the development of hardware systems for course transmission. We relied, instead, on making the best use we could of existing systems of transmission—our post office, our public libraries and, of course, the BBC. I believe that in the United States you have spent too much money on sophisticated hardware and not nearly enough on sophisticated software, namely on producing high-quality teaching materials.

It followed that, having spent a great deal on developing courses, we were forced to begin with a very large population of students in order that we could be seen to be cost-effective. And it seemed probable that, if the Labor Party lost the next general election and there was no commitment to the university from the Conservative Party, our one chance of persuading that party to support us would rest upon our cost-effectiveness. Yet we had no idea whether there would be a sufficient demand from the general public to

enable that cost-effectiveness to be demonstrated. In the event our gamble came off, there were sufficient applicants to fill all our places; and we were cost-effective as compared with other universities. There was a general election in 1970, and the Conservative Party did win it. And over the next two years we gained, very gradually, their approval and commitment. But it was a close-run thing; and in the summer of 1970 we very nearly disappeared without trace!

Over these years, we had to win academic acceptance. That, too, was slow to come, but it was gradually reached as the quality of staff, courses, students, and graduates became successively apparent.

I have dwelled upon this story of our gradual attainment of a national commitment because it seems to me likely to be a critical factor for other countries. Political support is essential. But now it is known that it can work.

The Open University offers its own degree. It must, therefore, offer a large number of courses for students to proceed through four years of study with an adequate range of choice of course. The larger this choice, the larger the initiation costs of developing the program; and in consequence the larger must be the total number of students to maintain cost effectiveness.

We have now calculated that, to maintain and rewrite a total of 87 full Open University courses (equivalent to some 1,300 credit hours of instruction), we require a total student population of 75,000.

This, in turn, with our levels of success (70 per cent) and rate of progress through the system (five to six years), requires an annual intake of 25,000 new students, of whom some 20,000 will stay in the system. In each of the last two years the total number of new applications has exceeded 50,000, so there does seem to be more than enough demand to sustain an enterprise of this size. At such a steady state our total expenditure annually would run at about \$50 million.

Is the concept of The Open University then an international one? Here we are on very difficult ground. Let me point out just two of the problems that face any state or nation attempting a similar scheme:

System of course construction.

1. Are there going to be enough students to sustain it? In the United Kingdom we receive, as I said, about 50,000 applications each year from a total population of 55 million—or say one in a thousand. Does this provide a good indicator? A decision to start an open university must depend upon whether the traditional institutions in the country concerned provide for a greater or lesser proportion of the total need for higher education than that provided for in Britain. It must then depend upon the total population of the country. Thus, for both these reasons, it would clearly be beyond the resources available to most individual states in this country to go it alone in starting an open university.

System of course transmission.

2. Is there an adequate pre-existing transmission system? As I said, The Open University did not develop such a system, and to do so would greatly add to the capital costs. Thus, in many developing countries, the open university system could not work without such extra capital investment.

These then are formidable problems to add to the political problem of starting another open university.

But is there another way of looking at things altogether? As the prototype open university we had to offer, as I said, a full range of courses leading to a degree. We had to do this because there were no pre-existing courses that we could use. That is, of course, no longer true for any other new open university, and there is no reason, therefore, why any other new open university should set itself this mammoth task. We, too, would be very happy to increase the range of choice of courses open to our students by adopting courses produced by other open universities; and in return by making our courses available to them. In this way the initiation costs falling upon any one university could be kept down.

The real problem—and we must not minimize it—lies in getting academic staff to accept courses written and produced by others. There is, of course, the feeling that, if they do, then jobs will be put at risk—a feeling that is not justified, at least during a period of expansion of provision. There is also a feeling of pride that "We can do better than anyone else," a very natural reaction. It can be overcome only if the realities of cost are fully appreciated and there is manifestly no other way of succeeding.

It is my belief that we are all moving in this direction. The fraction of the gross national product of any nation devoted to education cannot go on rising very much longer. Ways of doing things more cheaply must be found and even academics—in their ivory towers—are becoming more aware of this fact.

Let me finish, if I may, by returning to the main theme of this conference, namely *Designing Diversity*. The open university is only one of many systems that are needed. The tailor-made courses of universities without walls and of the Empire State College offer to many people opportunities that the open university system cannot match; and similarly we can offer society things that are beyond their reach. Both types of systems have essential and complementary roles to play. I touched earlier on the problems of moving from a system based on initial education to one based on continuing or recurrent education. No country can afford both systems concurrently. But open learning systems, like The Open University, can act as catalysts for change. For they can contribute to the gross national product. The cost of adding open learning systems to an existing system based on initial education is not, therefore, exorbitant. And by their use they could thus enable a change to a system based on continuing education to take place by evolution rather than revolution. Perhaps it is in this field that the real need for designing diversity will ultimately lie; and where the real progress in education over the next few decades will be found.



Samuel B. Gould is the chairman of the Council for the Progress of Nontraditional Study. As Chancellor *Emeritus* of the State University of New York, Dr. Gould served as Chairman of the Commission on Non-Traditional Study which concluded its work in 1973 with the report, *Diversity by Design*. He has continued to provide leadership in the field through his association with the Instituté for Educational Development and, more recently, with the Council for the Progress of Nontraditional Study. Through his leadership, the council promotes the progress of innovative approaches to education when they are appropriate alternatives to the traditional, and identifies and explores the relationship of education to changes within society itself. Dr. Gould is also a senior advisor to the University of Mid-America and has counseled the project through its developmental periods as the State University of Nebraska (SUN).

Charge to the Conference

**Samuel B. Gould
Council for the Progress of Nontraditional Study**

I

The work of the Commission on Non-Traditional Study is familiar to all of you, and I shall not repeat it here. Some, however, may not be quite so familiar with the aftermath of its efforts. This began with the formation in February, 1974, of a Council for the Progress of Nontraditional Study with the financial support of the Phillips Research Foundation, and carried on under the auspices of the Institute for Educational Development.

During 1974 the council was busily engaged in establishing the base for its anticipated years of work. It had met twice as a body during the spring and summer, had organized and held a number of smaller meetings to examine some of the major issues of open learning, and was encouraging action of many kinds from many sources based on the original commission's recommendations. It was also assisting in the organization of the Second National Conference on Open Learning and Nontraditional Study.

Unfortunately, in the autumn of 1974, we were shocked and dismayed to discover that not only was the support of the foundation no longer available, but the council as well as the institute had been left with a considerable sheaf of unpaid bills. I shall not expand upon this aspect of our history, since there are serious financial and legal questions still unresolved. The result to this point, however, has been to place the council into a state of suspended animation. I have been engaged in efforts either to restore it to an active status or to supplant it with some similar organization under other auspices so that the unfinished work may go forward. Needless to say, these developments have been matters of deep regret to me, not only from a personal point of view, but, more important, because of any negative effects they might have on the progress and acceptance of nontraditional or open learning programs.

II

This brings me to the heart of what I want to say: a review of where we stand today, what assumptions we can make with any reasonable degree of accuracy, and how we should regard the future.

At one of the meetings of the council I voiced the view that in spite of the evident growth in the numbers of open learning projects, in spite of the progress of some of the stronger programs, and in spite of the growing interest in open learning possibilities, a negative reaction to open learning was also becoming more apparent and more vocal. Some of this was based upon confusion among ourselves and certainly externally; some was based upon individual instances of failure because of unrealistic planning or bad execution; some was based upon no more than in-grained prejudice or, probably just as often, on a sincere belief that educational opportunity for the many was bound to be a great leveller and a step backward in quality for all. And some of the negative reaction was based upon fear that a new competition was arising that might divert students from more traditional institutions which are already suffering misfortunes for reasons totally unrelated to open learning.

The council was greatly distressed and even discouraged by my comment, even though I made it more as a report of circumstances than as a question as to whether our efforts were worthwhile. And I would venture to guess that some of you have been having your moments of doubt as you have seen more and more of a spotlight thrown on well-intentioned failures or examples of charlatanism that spell danger. There is value in being aware of failure of any kind, of course, and much to be learned from it. I was interested, for example, in that portion of the annual conference of the American Association for Higher Education (certainly an aware and concerned friend of educational change) which featured a series of sessions on "creative failures," as they called them ("projects and ideas whose time came—and went"). I was not privileged to be present at the conference, but I saw nothing in the report that indicated a parallel series on successes—projects and ideas whose time is not yet over. Yet someone, somewhere, must be doing something with at least a prospect of success. There would be value in hearing more about these also, it would seem. And if we are determined to spotlight failures as an important way of our learning to do otherwise, then a series of AAHE sessions on the failures of some of our more traditional institutions seems appropriate also as a way of approaching educational failure with more balanced view.

Programs and recommendations of friendly organizations such as AAHE and others not so friendly serve a very useful purpose in reminding us what a long, slow, and tortuous process we have ahead of us if open learning is to be a strong and significant force in education. It should remind us

also that every error we make will be carefully and publicly noted and that every such error will have its effect upon public and private support; whether in academic or financial terms. Accrediting agencies, which have shown remarkable understanding and willingness to give new programs a fair chance, are not yet completely prepared for the kind of monitoring that is so necessary. Individual state legislation is in most instances still too weak and too preoccupied with standards that are too minimal to guard against abuses, flagrant or carefully masked. And so the vulnerability of open learning, while not unexpected, is a serious burden to carry.

This, in general, is the background or backdrop before which we must currently expect to perform. I do not say this sadly, and certainly not bitterly. It is a fact of academic and financial life with which we must live, and there is no way to shunt it aside. A strategy toward assurances of quality must be devised and carried through, a strategy that calls for meticulous planning, frank appraisals, but none-the-less optimistic belief in the possibility of ultimate success. This is crucial to the future of open learning. If the strategy fails, we shall have a regression that closes the doors of opportunity in existing institutions to millions and that points us squarely in the direction of elitism. Failure will most certainly bring about an even stronger alternative system than now exists with all its accompanying and possibly dangerous implications if it functions independently from the rest of education. And, sadly enough, as matters now stand, the cause of educational elitism will also suffer; nothing has been devised thus far to prevent the shrinkage in number of those institutions who have as their chosen and single goals the education of scholars. Only the strongest will survive, and these have so far shown little organized interest in assisting the less strong who would still like to be part of their total number.

May I suggest a set of assumptions, therefore, that may be useful as starting points as we re-examine specific tasks, or even points to be challenged and debated here and elsewhere. I had expected to lay them before the council to occasion discussion and a plan of action, but at this moment we are, all of us, the council, and will continue to be for some time to come.

My first assumption is that for the foreseeable future financial support for higher education will continue to be at least as limited as it is now both from public and private sources because of (1) other social demands that require massive support, and (2) general confusion on the part of the public as to the effectiveness of the present system.

We lived for many years in a time when education was the major preoccupation of the American people. Sputnik gave a tremendous lift to the sciences. A burgeoning college population (from 450,000 in 1947 to almost 9,000,000 today) brought immense capital expansion and comparatively generous support for annual operations. The spectacular rise of the junior and community colleges added still another positive dimension. But, as we know, more recently other social demands have begun to take precedence, or at least to be strong competition for the public and private dollar. The areas of health and welfare, to mention only two, have made great inroads where education earlier was the supreme concern. There is no likelihood that this trend will be reversed; indeed, it may continue to cause education to fall farther and farther behind. And there has been little or no adaptation or adjustment of the educational world to this development; at best, it has only partially and reluctantly accepted the fact that it is now just one of several major social needs.

Added to this have been the confusions in the minds of the general public as to the effectiveness of the present system. Some of these confusions and doubts emanate from the events of the mid- and late 60's, when college and

university campuses were so plagued with unrest and even violence. Some of the doubts are more substantive in nature: questions as to why some students seem not to have mastered basic fundamentals such as reading or writing; why everyone must go to college; what the baccalaureate degree really means in practical terms and in any other way; why there is such latent ill-will and even undisguised animosity between and among the various levels and segments of the academic hierarchy. These are legitimate questions to which we in education have not responded frequently enough either with explanations or corrections. Public confidence in education plummeted during the 60's, and has not yet been restored.

It is unlikely, in my view, that these situations will change quickly. In fact, my second assumption is drawn directly out of the confusion within the public I have just mentioned. It is that the present divisiveness among the various segments of post-secondary education will continue to be a disturbing factor both in and out of the academic world.

We ourselves are the greatest contributors to this divisiveness, in that we rarely, if ever, present a unified front with a clear set of objectives. We have become adversaries to one another. Instead of making diversity a true strength, as we always claim it to be, we give the strong impression that quality is restricted to certain segments of education and unavoidably absent in others. We have never given the public an understanding that what counts is the individual's need and capability, and that within that need and capability a high quality of education should and can be provided. We need scholars, generalists, specialists, professionals and para-professionals, artisans and artists, scientists and technicians, people who can reach high levels of culture, and those who wish merely to be well-informed. To say that any of the educational tasks necessary to develop this variegated effort toward skill, talent, and responsible citizenship should be considered greater or lesser in importance than any other is to make a travesty of the whole learning process. But we have not made this clear.

I wish I could say that our internal struggles were simply evidence of a happy, healthy discontent. But there appears to be more rather than less rancor among us currently, and not many signs that the trend will reverse itself. Academic journals and popular magazines carry articles in which spokesmen for the various segments or philosophies of education range from the waspish to the venomous in their attacks on one another. And whether it is the private institution inveighing against the public one because it feels there are inequities in financial support, whether it is the community college vs. the four-year institution, or whether it is the old argument of education for careers vs. the creation of the so-called "whole person," it is the learner who is ultimately left in a troubled quandary. What is "good" education? And for whom is it good?

Every week we read some new attack by the representative of one type of higher education against another. And usually the attack starts from the premise that higher quality at lower true cost can only be found in one sort of education *vis-a-vis* another. There has been far too much partisanship permeating higher education and far too much ill will in its expression. This has fostered the notion that higher education does not have its own great house in order, as it turns for support from its citizenry, whether through public or private sources. We have forgotten that the great house of learning has many mansions; that the doors to all should be open to those qualified to inhabit them; and that the furnishings and life styles are necessarily different, as are the dwellers. But there is nothing antithetical in the existence of these mansions side-by-side or in the potential and actual neighborliness of those who teach and learn within them.

My third assumption is that efforts toward innovation and reform in higher education will persist because of the unfulfilled needs of additional learners and the increasing pressure of their demands.

This is an assumption that does not require too much discussion at this point. Either one believes the many surveys that indicate the potential numbers, the needs, the desires, and the obstacles, or one doesn't. The surveys tell essentially the same story, whether statewide or national or regional in scope. Even after the appropriate statistical deductions have been made, a huge group of people still remains to be served. We face the same questions now that we faced originally: Are we going to serve them, and if so, how? And if we do not serve them, who will? Many of the unserved will not be passively willing to remain so. They will look elsewhere for what they need.

My fourth assumption is an obvious one—that acceptance of new approaches to learning, generally labelled "open" or "nontraditional", will be slow and will take place in an atmosphere of reluctance on the part of a good portion of the academic community.

The first flush of enthusiasm for making educational opportunity available to all who can benefit from it has faded to a more realistic appraisal of how academic change actually occurs. This is undoubtedly all to the good. There should be no illusions about how long it takes for an academic concept to become firmly rooted. At least two decades of hard and relentless work lie ahead with trial and error, success and failure, and always with the burden of proof squarely on the innovator. I see no short cuts that would be wise and no miracles of conversion. I see, instead, a very gradual trend toward more flexible attitudes, followed by more flexible program possibilities. The emphasis, as had been said so many times, must be on efforts to establish and maintain quality and upon creating the instruments that can assist and strengthen the flexibilities. Until the successes are virtually unchallenged and greatly overshadow the failures, we can expect that far more attention in the immediate future will center on every real or apparent failure that becomes evident.

My final assumption stems from the preceding one—that involvements of our formal educational system with other agencies, organizations, and institutions will be strongly resisted for a considerable time to come, and will be looked upon with suspicion by a considerable portion of the academic community.

One set of recommendations by the commission which were being followed up by the council related to the array of educational resources within a community or region that are actually or potentially available to the learner and provide additional options. There are a number of categories of these, non-profit or proprietary, cultural, social, artistic, business, or industrial. In some parts of our country, there are instances of efforts to bring these together. Some libraries, or library associations, for example, have been active in their efforts to create programs characterized by this more inclusive outreach. In other instances, the leadership has come from elsewhere, sometimes even from academic institutions. But it seems reasonably clear that, as yet, this concept of cooperative community endeavor with active college or university participation is still a relatively alien and unwelcome prospect, at least so far as the academic community is concerned. No one can minimize the difficulties and complications inherent in creating even the loosest of consortia of this type, and it will take some spectacular examples of success to get a significant number of such ventures to be launched. Yet, we should not forget that here is a truly rich resource for the learner, not to be forgotten or ignored. It may even have favorable economic implications as one looks ahead to bleak years of more conventional funding.

III

This is a quick summary of where we seem to be and the attitudes and events that have taken us there. It may sound overly negative, but it is not intended to be. There are positive elements also that we can look upon with some degree of pride. I still believe firmly what I have believed for many years: that as our population becomes less credulous and, therefore, less docile (and we have ample evidence of this every day), there is an inevitability about the increase in desire for open learning. This desire will grow as an educational movement whether or not it is carefully planned and monitored. If, however, it were to grow without appropriate planning, interpretation, programming, and evaluation, the results could be tragic and sometimes scandalous. The need to find ways to guarantee that such results cannot occur is, therefore, greater than ever.

The fact that progress is bound to be slow should not discourage us. Whenever I become depressed by what seems a great weight of inertia, I take down from my bookshelf a tiny volume published originally in 1908 at Cambridge, England, but reprinted again and again because it is still so timely. It is titled, *Microcosmographia Academia*, and was written by F. M. Cornford, who must have been wise in academic experience and was witty besides. It is filled with passages that give comfort. For example, Cornford says, in his chapter on *Arguments*:

There is only one argument for doing something; the rest are arguments for doing nothing.

The argument for doing something is that it is the right thing to do. But then, of course, comes the difficulty of making sure that it is right.

He goes on to point out that:

Even a little knowledge of ethical theory will suffice to convince you that all important questions are so complicated, and the results of any course of action are so difficult to foresee, that certainty, or even probability, is seldom, if ever, attainable. It follows at once that the only justifiable attitude of mind is suspense of judgment: and this attitude, besides being peculiarly congenial to the academic temperament, has the advantage of being comparatively easy to attain.

And so, a bit later, this thought leads Cornford to propound the *Principle of the Dangerous Precedent*, which is:

That you should not now do an admittedly right action for fear you, or your equally timid successors, should not have the courage to do right in some future case... Every public action which is not customary either is wrong, or, if it is right, is a dangerous precedent. It follows that nothing should ever be done for the first time.

Despite some prevalence of inertia, doubt, and opposition, positive things are happening, exciting and promising things. The seriousness and the cooperative attitudes with which regional accrediting agencies have approached new and necessary adaptations of assessment and evaluation brought about by open learning structures and methods have been heart-warming. I cannot speak appreciatively enough about their statesmanship and that of the national organization, the Council on Postsecondary Accreditation. The attention and support of various federal agencies, such as the National Institute of Education, the Fund for the Improvement of Postsecondary Education, and the National Endowment for the Humanities; the attention, support, and involvement of organizations such as the American Council on Education, the National Association of State Universities and Land Grant Colleges, the American Association for Higher Education, and

others; the attention and support of numerous foundations, large and small; the active interest displayed in other parts of the world through such institutions as The Open University of the United Kingdom or Everyman's University in Israel: All these developments bespeak progress. And most of all, the emergence of programs in our own country that show increasing strength and significance because of the care with which they are being nurtured give us reason to be cheerful as we struggle with a host of new and unsolved situations.

I have made it clear that those of us concerned with encouraging open learning must expect to traverse a long, hard road, often blocked or impeded by veiled or even open enmity. Strong efforts must therefore be made to interpret open learning honestly and properly, to monitor its quality, to create appropriate materials for its use and make their distribution feasible and available to all who desire them, to make it part of the mainstream of education. We should discourage the involvement of institutions or organizations that undertake open learning programs without a strong sense of commitment, who see in its diverseness and flexibility a way to survival of profit rather than a worthwhile alternative for the student. In other words, we should do all in our power to seek out the motives for adopting alternatives and be certain they do not include any lessening of academic rigor. And we should face squarely the fact that although lifelong learning as a concept is still being given much lip service, it is today not much more of a reality than it ever has been.

The significance of the original commission's recommendations continues to be evident. Many are being acted upon; some remain relatively unexplored. This is to be expected when we remember how little time has elapsed since they were first proposed. One cannot set them all in a careful timetable; one can only continue to press for action.

Finally, we must not be drawn into becoming contributors to the general attitudes of divisiveness I spoke of earlier. Our desire is a simple one that focuses primary attention on each person and his or her eagerness for improvement. I cannot believe that in the long run this is in any way opposed to the desires of every other kind of education, traditional, or nontraditional. We must join in the cooperative process of presenting to America, and to the world, how essential is the need for many kinds of education, for people of all ages and circumstances and walks of life, avoiding any implications that our particular procedures are the only ones with merit or that their use leads to a fragmentation and division within the ranks of education as a whole.

When I spoke last year in Nebraska, at our first conference, I said I was a "despairing optimist." Events of the past year and a half have given me many additional and more personal reasons for despair. But they have in no way attenuated my original sense of optimism nor lessened in any way my conviction that what we are attempting is worthwhile, is logical, is necessary, is attainable. I have been a teacher too long not to feel my heart quicken each time I see a new light of understanding shine in the eyes of another person and a new and broader vista of the mind and soul suddenly come into view. All who teach and all who learn (and our roles are constantly interchangeable in this marvellous undertaking) share in this delight. And, just as there is great diversity in what we strive to offer and make more readily available, so also are we confronted with great diversity in the degrees of difficulty the various parts of our concept reflect. If we believe the goals are right, we cannot and must not be discouraged or dissuaded by a pace of change that seems, for some of us too slow, or by instances of failure, whether born out of bad or good intention. I still say, as I have said many times before, that we have a most fascinating and rewarding set of tasks before us.

IV

As we think of all these matters today, we are literally at the beginning of a process that seems extraordinarily promising, yet has many unknowns. But Justice Holmes once said that every year, if not every day, "We have to wager our salvation on some prophecy based on imperfect knowledge." We are aware of strengths and weaknesses in what we now do educationally even though we know them imperfectly. We are aware of the learning desires and needs of our people, even though we know *these* imperfectly. We are aware of new ways and new combinations of old and new ways to meet such desires and needs even though we know *these* imperfectly. But the importance of the need and the greatness of the desire should be enough to make a beginning.

The world we once knew familiarly and thought we could always rely on seems to be disintegrating before our very eyes. The values by which people have always proposed to live with other people seem to be discredited, or at least reinterpreted, so that we are uneasy as individuals and as a nation. We were so sure of everything, and now we are suddenly unsure of anything—with one towering exception. We are still certain that we need to know the truth, whatever it is, and with whatever joy or pain it brings in its wake. And that means we are still dedicated to the concept of an informed citizenry, informed and enriched in understanding through every possible learning resource. All of us are instruments to strengthen that dedication if we choose to be.



Harold L. Hodgkinson was sworn in as director of the National Institute of Education in May, 1975. He has a reputation as one of the most knowledgeable research authorities in higher education. Formerly on the staff of Berkeley's Center for Research and Development in Higher Education, Hodgkinson served as dean of Bard College in New York State until 1968. Last year he was president of the American Association for Higher Education. He has given much of his time to the development of evaluation tools for non-traditional education. Hodgkinson was a campus consultant on innovative programs and has written extensively on the subject.

Technology and Education

**Harold L. Hodgkinson
Director, National Institute of Education**

Among the things I would like to do, first is to try to explain a little about why we are so interested in open learning, particularly adult open learning. I also would like to discuss some of the reasons why Americans have lost some faith in higher education; some of the things that we have done to renew that faith; and some new options we should consider.

First of all, why are we so interested in adults? We are running out of young people. It is amazing to me, the amount of moral and ethical dedication to educating adults that has swept America over the last five or six years.

Dr. Hodgkinson's remarks were not intended to be a formal paper submitted for publication. This is a transcript of the talk he gave in a media presentation at the banquet session of the conference.

As shown in Figure 1, we are still on a light increase in terms of the number of people in the 18 to 21-year-old category, but in 1980 those numbers begin to go down, and they go down in rather a sharp fashion.

We are literally running out of young people. You have been told that before, but here is something that I don't think you have been told. If you look at where the decrease is coming, as designated in Figure 2, you will find that, in terms of the total birth population in 1960-72, it is primarily the caucasian birth rate that has shown that decline. In this particular case, for example, most of the total decline comes from the caucasian sector; but if you look at minorities births from 1960-72, the line remains remarkably straight. That means that there is a higher percentage of the births in 1972 among minority groups—20 per cent compared to 15 per cent, in 1960. The numbers have not changed, but the proportion of births in minority groups has gone up significantly.

Illustrating the situation is Figure 3, taken from a book called *Social Indicators 1973*, produced by the Office of Management. It illustrates the situation vividly, showing a downhill roller coaster line representing the number of 18-year-olds who are white, and a steady, only slightly declining line, representing the number of 18-year-olds who are black. The percentage of 18-year-olds who are black goes to 12 per cent in 1965, to 18 per cent by 1985. If you add all the minority groups in the 1985 data, it does look as if the 18-year-old cohorts by that time will be something like 30 per cent from minority faction. That is a terribly important thing when you think about

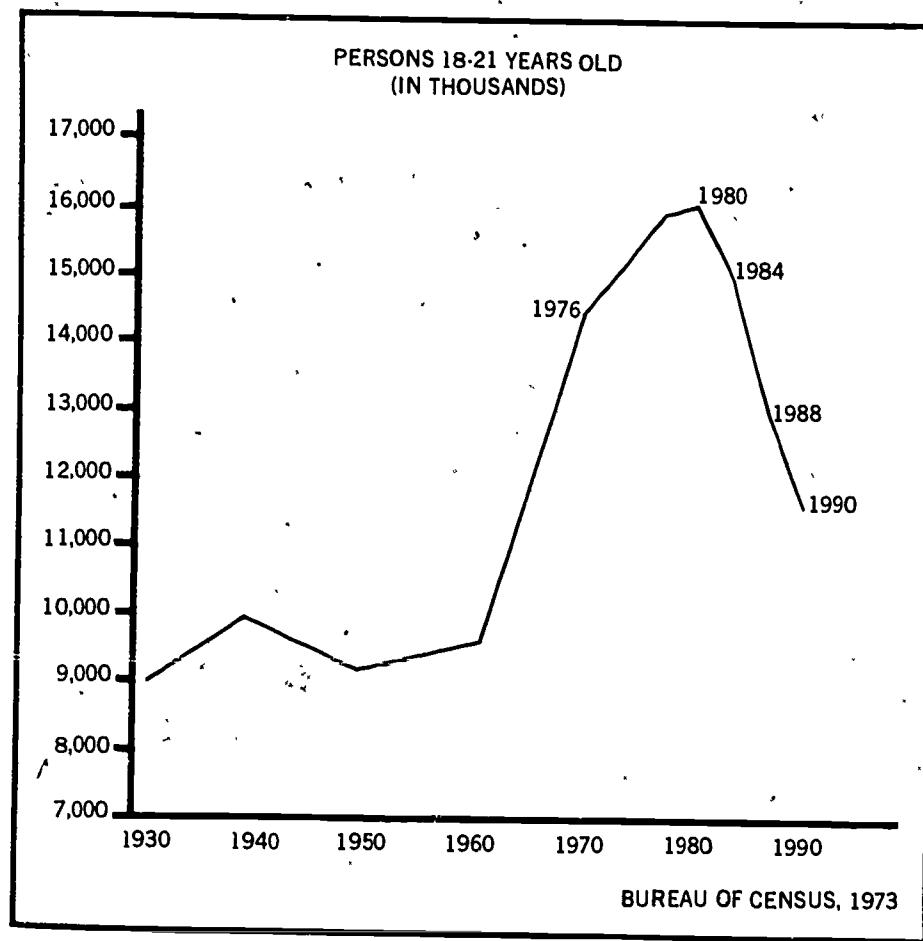


Figure 1

the job of educating a conventional student. There must be 500 small colleges in this country that think to themselves "Well, okay, that may be interesting nationally, but there will always be 400 freshmen who want our kind of college." By "our kind of college," they really mean a college which manifests a caucasian, middle-class protestant value system. It may not be true.

The study also suggests that those of us who think that we can wait out the question of racial minorities, or the question of lower socio-economic status background, and then, sometime in the future, it will go away, are kidding ourselves.

In addition to having a declining number of 18-year-olds, we have a higher percentage of those people who come from backgrounds which don't work terribly well in conventional education settings. In addition, we have the problem you always seem to have in rising expectations. This is a thing that has been talked to death, but I will just give you one little example.

Looking at Figure 4, it is quite clear that minorities have made considerable progress in raising their annual income from 1947 to 1971. But during the same time span, white people's median annual income also has raised so the line remains remarkably parallel, which does tend to suggest that there is a terrible problem in terms of catching up. This has a great deal to do with the number of people who come from a minority group background who feel that college is the way to catch up. I discover a considerable sophistication among young people who come from minority backgrounds when they know that there are many ways of making a good living besides doing something that requires going to college. I am very worried about that, particularly because it might mean that in the future the decline in the numbers of minorities background going into higher education may go down instead

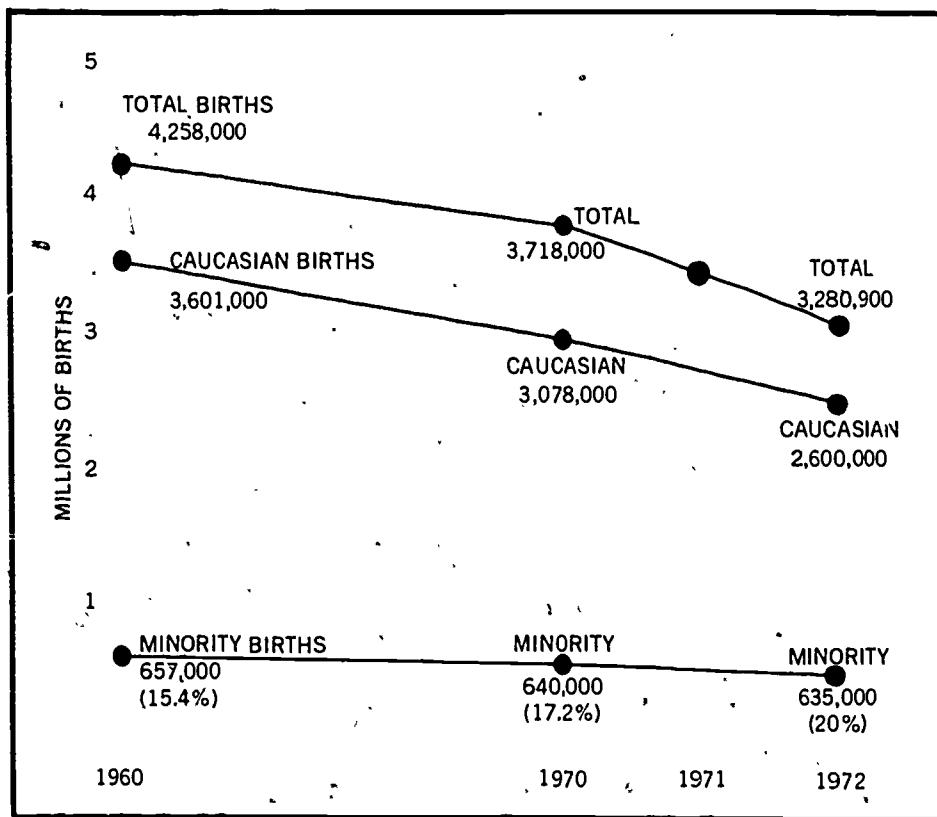


Figure 2

of up. At the moment we are doing fairly well on that, but I think in the future it will be more difficult.

As you know, a smaller percentage of the high school graduating class goes directly on to further education now, compared to a period when almost 50 per cent of the high school graduates went on to some form of further education. The college ratio for recent high school graduates, is now running about 35-36 per cent. That is something to worry about. Compounding the

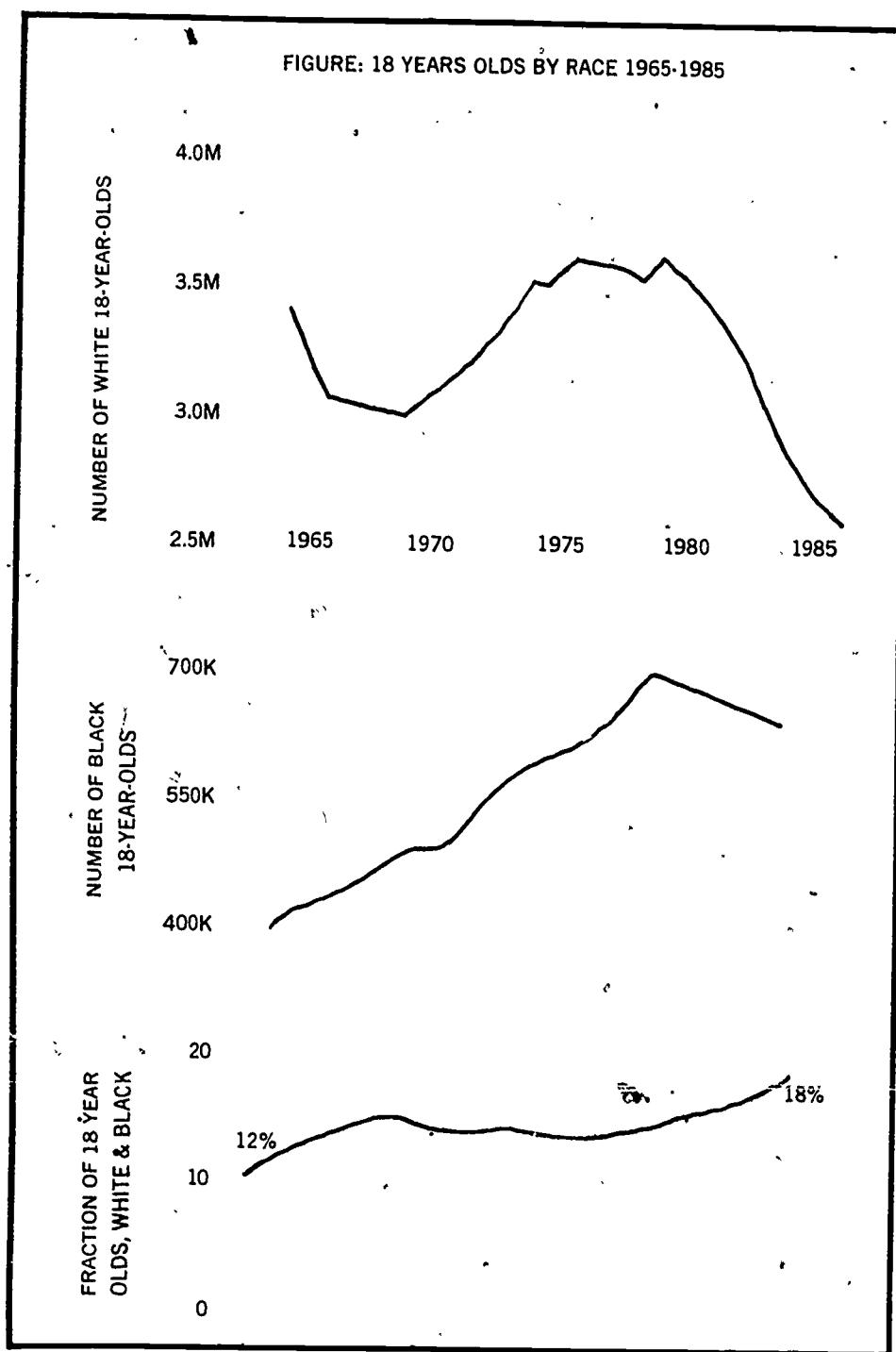
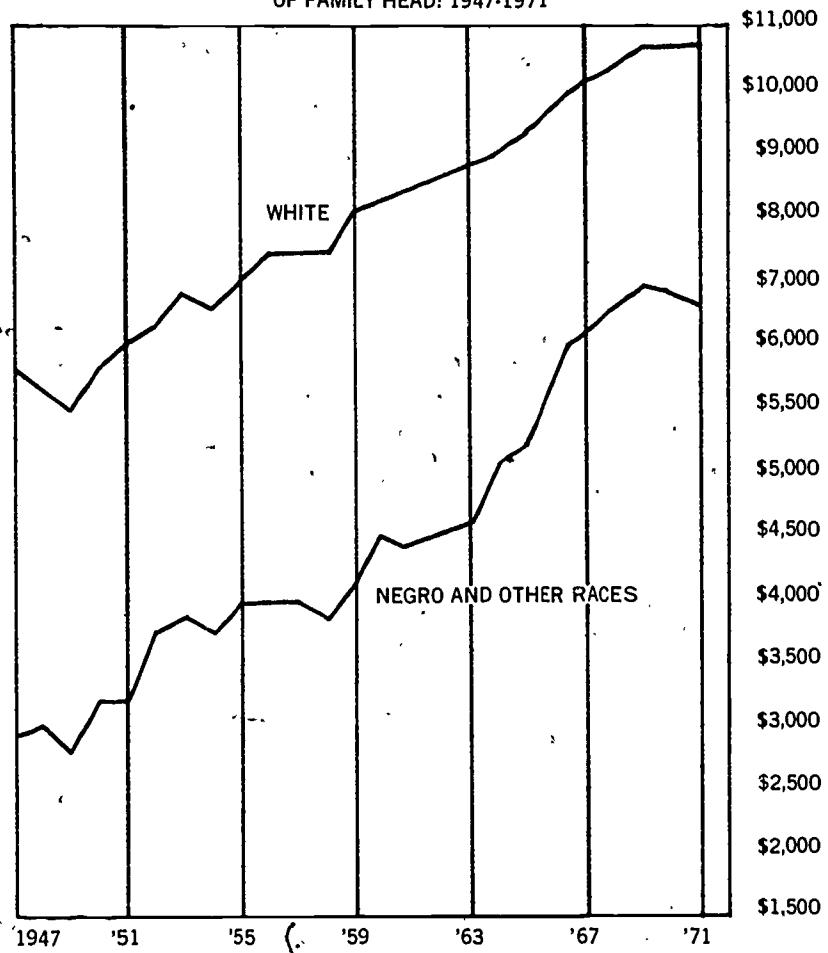


Figure 3

MEDIAN FAMILY INCOME, BY RACE
OF FAMILY HEAD: 1947-1971



RATIO OF NEGRO AND OTHER RACES TO WHITE

RATIO

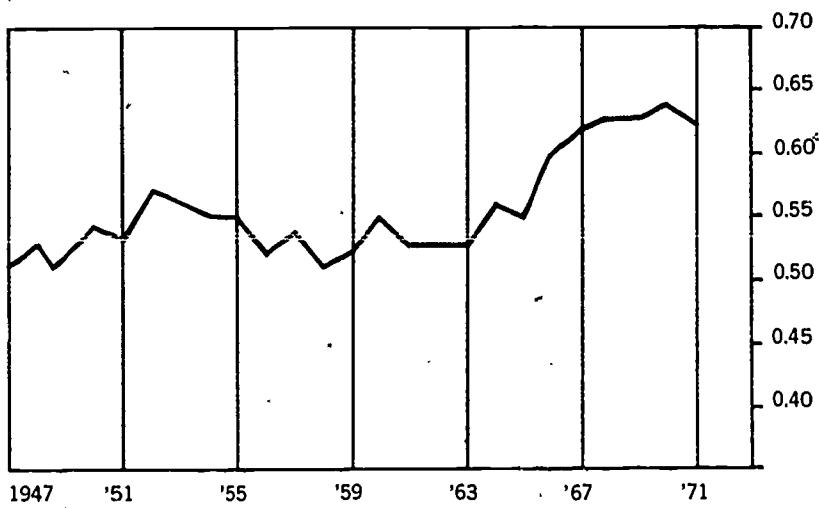


Figure 4

problem of a declining number of 18-year-olds, and increasing cohorts from that group who come from minority group backgrounds, and lower SES backgrounds, a declining percentage of 18-year-olds is going directly on to some form of further education. It has led us to a new kind concern—the egalitarian tendency, in contrast to the 1860-1910 aristocratic era, when one per cent of the birth of cohorts ended up in college or a university. College and university didn't matter too much during that period because such a small percentage went and they went because of birth. There was no need for an SAT at the small colleges that were existence in 1860's, because nobody would have known what to do about them anyway.

We moved from the aristocratic era to the meritocratic era. This was a period when large numbers of young people sought admission to college, particularly through the GI bill, but also through many other forms. We had to develop an easily scored and relatively reliable way of keeping some of them out. There simply weren't enough places during those years to admit everybody who wanted to go to college. Our colleges had an enormous building program—very much like those of the real estate developers in the suburbs, trying to get new places put up so that all those people who wanted education could get it. But, meanwhile, we developed a series of tests called aptitude tests. All of the testing was primarily for admission, not for graduation. American society still trusted what we said a BA meant and was willing to take our word that if anybody sat on his seat for four years, he probably learned something. Testing at graduation was not a big issue at this period.

THREE STAGES OF HIGHER EDUCATION

- 1.) ARISTOCRATIC STAGE (PLACE IN SOCIETY FIXED BY BIRTH)
NO NEED FOR TESTING FOR ADMISSION OR GRADUATION
- 2.) MERITOCRATIC ERA (1947-1970)
LARGE NUMBERS SEEK ADMISSION, NOT ENOUGH PLACES.
TO REJECT PEOPLE, DEVELOPED PROXY TESTS OF "MERIT"
CALLED APTITUDE TESTS.
HEAVY USE OF TESTS FOR ADMISSION, NOT FOR GRADUATION
(INSTITUTIONS HAD MONOPOLY ON "MERIT" PRODUCTION.
NOT QUESTIONED)
- 3.) EQUALITARIAN ERA
DECLINE IN NUMBERS SEEKING HIGH EDUCATION.
GREATER BELIEF IN EDUCATING EVERYONE TO THEIR OWN LIMIT.
SOCIETY WANTS TO "DEMYSTIFY" HIGHER EDUCATION.
JOBS ARE SCARCE; COURTS HAVE STRESSED EQUALITY AND
AFFIRMATIVE ACTION.
LACK OF INTEREST IN ADMISSIONS TESTING. (DECLINE IN SAT
SCORES FOR 10 YEARS).
GREAT INTEREST IN PROFICIENCY TESTING (JOB-RELATED)
FOR GRADUATION.
WHAT COUNTS IS NOT FAMILY, NOR APTITUDE, BUT COMPETENCE
IN AREAS DIRECTLY RELATED TO LIFE.

Figure 5

It was testing for admission. During that period it was the view of higher education, and probably American society, that to select a meritocracy that would run the country was the job of higher education. From there we go to the egalitarian tendency, probably because of the declining number of people seeking higher education.

A greater belief in educating everybody to their own limits and a funny kind of demystification is going on now that Max Vapor talked about a long time ago. People don't like jargon; they don't like to be told by lawyers, "Buddy, you can't possibly understand this but give me \$500 and I'll make sure that you get a legal divorce." That kind of thing doesn't go down very well. Now you can walk into any stationery store in the United States and buy a perfectly legal loan form if you want to loan somebody some money. Fifteen years ago, you couldn't do that. You had to go to a lawyer and pay \$50. Now you can buy that "knowledge" at a stationery store. There are about 400 books now in circulation which suggest that if you don't like what your doctor tells you you've got, maybe you can find a better solution or diagnosis, or maybe, if you'd eat some kind of strange food, you'd get better. There is a great tendency to demystify the professions, and I don't think that we have taken that seriously enough in education. When I got my courtesy calls in relation to NIE, first thing that people said to me was, "For heavens sake, don't use those big words on me or on my colleagues in Congress." I tried very hard to use nothing more than two or three-syllable words, and you can actually say some things that are reasonably intelligent using two and three-syllable words.

Notice that the egalitarian era was a time when, because of the courts' affirmative action, we were beginning to change our testing procedures. We are not so much interested in "who gets in" as we are interested in the quality of education of "who gets out." What does it mean to have a college degree? The whole question of testing is a clue as to where our values have shifted, and they have shifted from admission, which meant rejecting people, to the final moment of graduation, when we want to know what people can do when they leave with a degree or a credential. That means, of course, the shift in attitude opened up the whole possibility of getting the degree or credential

APTITUDE TESTS ARE USED TO PREDICT GRADES IN COLLEGE, BUT WHAT DO GRADES PREDICT?

"RESEARCHERS HAVE, IN FACT, HAD GREAT DIFFICULTY IN DEMONSTRATING THAT GRADES IN SCHOOL ARE RELATED TO ANY OTHER BEHAVIOR OF IMPORTANCE. IT SEEMS SO SELF-EVIDENT TO EDUCATORS THAT THOSE WHO DO WELL IN THEIR CLASSES MUST GO ON TO DO BETTER IN LIFE THAT THEY SYSTEMATICALLY HAVE DISREGARDED EVIDENCE TO THE CONTRARY THAT HAS BEEN ACCUMULATING FOR SOME TIME."

(DAVID McCLELLAND, "TESTING FOR COMPETENCE RATHER THAN FOR INTELLIGENCE" AMERICAN PSYCHOLOGIST, JANUARY, 1973)

Figure 6

without going through the exercise of sitting in a classroom for 124 credit hours. I would contend that could not have taken place unless we had moved for this kind of equality. Otherwise, we would still be saying, "You have to sit in class for 124 hours or you're not meritorious."

So one of the things that led to the whole open learning movement is the notion of egalitarianism and all the things that it meant, and the fact that we

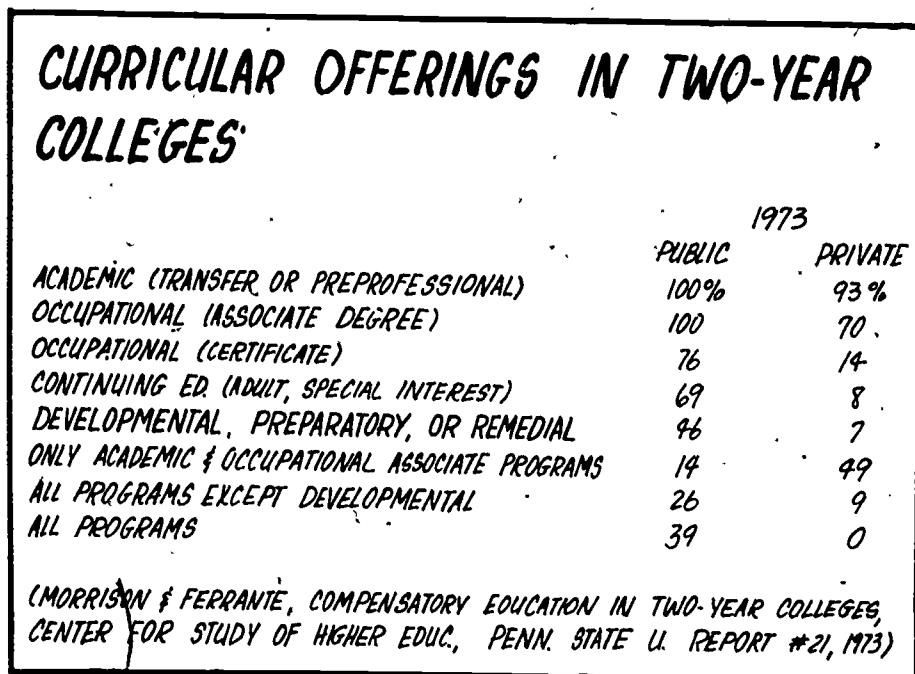


Figure 7

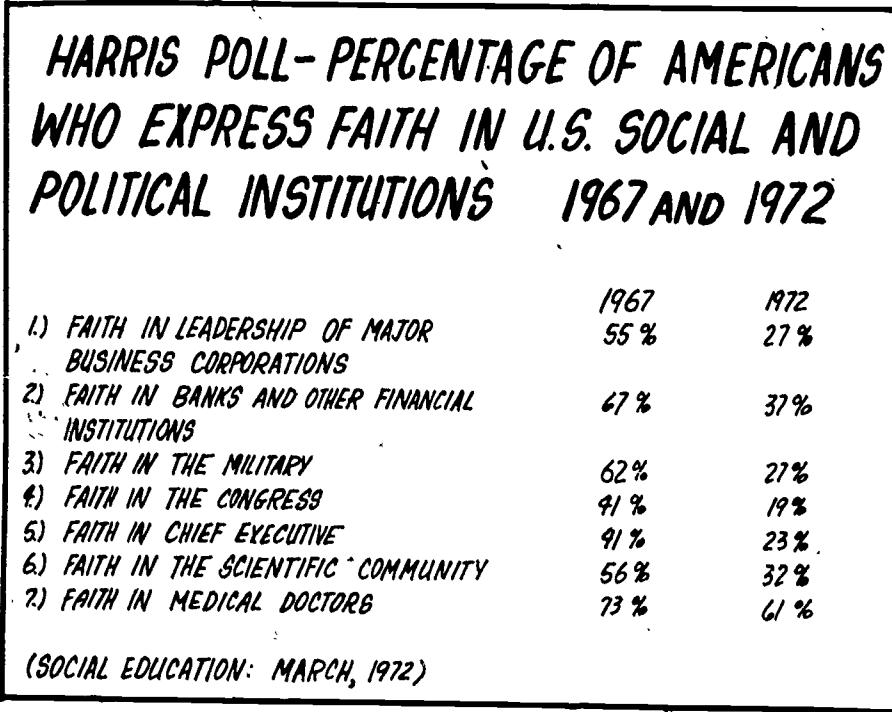


Figure 8

moved our testing procedures from entry testing in the beginning to proficiency testing in the end. In other words, "What can you really do? What are you competent at? If you are competent at it, and you can demonstrate it, and you did go to school, great; we will give you the credential anyway."

It is important to realize that we have also said, "Some people who are coming into our colleges and universities are not well-trained and don't have the background, so we will follow open door colleges or community colleges. They can take care of those people so that if the minority cohorts continue to go up and if their social class continues to go up, we will simply send them to the open door policy because you can just walk in through the door and go to class."

But that just isn't true. At least in the study I'm discussing, which is pretty good. Done in 1973, it is a small sample study with relative reliability. You find that an awful lot of community colleges have placed restrictions on who can come in. Eighty-six per cent want a high school diploma, 27 per cent

LEVEL OF CONFIDENCE IN AMERICAN INSTITUTIONS

SURVEY OF: CROSS-SECTION OF CALIFORNIA ADULTS MAY 1973

	1	2	3	4
RESEARCH SCIENTISTS	58%	34%	5%	3%
LOCAL POLICE DEPARTMENT	51	40	7	2
MEDICAL PROFESSION	43	44	13	*
THE FBI	43	40	13	4
CONSUMER GROUPS	37	42	14	7
THE PRESIDENCY	34	34	31	1
PUBLIC UTILITIES	33	48	17	2
SUPREME COURT	31	45	21	3
CONGRESS	30	53	15	2
ENVIRONMENTAL GROUPS	30	48	17	5
NEWS MEDIA (NEWSPAPERS, TELEVISION, AND NEWS MAGAZINES)	27	55	18	*
UNIVERSITIES & COLLEGES	25	62	11	2
ORGANIZED RELIGIONS (CHURCHES)	24	46	28	2
PUBLIC SCHOOL SYSTEM	23	51	25	1
FINANCIAL INSTITUTIONS	22	51	25	2
ORGANIZED LABOR	13	50	34	3
STATE LEGISLATURE	12	67	16	5
MANUFACTURING CORPORATIONS	9	55	30	6
FOOD COMPANIES	9	52	35	4

* LESS THAN ONE-HALF PERCENT

1=A LOT 2=SOME 3=NOT MUCH 4=NO OPINION

Figure 9

have a minimum age requirement, 8.8 per cent require test scores, 41 per cent require a physical exam (That may not sound much to you, but a physical exam costs a certain amount of money and community colleges are not willing to pay it). Thirty-four per cent want a high school diploma or certificate, 5 per cent have a minimum age characteristic and 55 per cent have some combination.

Also, as shown in Figure 7, only 46 per cent of the community colleges had developmental or preparatory remedial programs. Less than half were prepared, in a programmatic sense, to deal with the new student who is inadequate. The facts lead us to the conclusion that we can't rely on the two-year colleges to do the whole job for us, at least in their present state.

One thing we have to remember is the fact that Americans have changed their faith, not only in us, but in a large variety of social institutions. If you look at faith in the leadership of major business corporations, as shown in Figure 8, it dropped from 55 to 27 per cent between 1967 and 1972. Other declines in faith over the same time span included: bank and other financial institutions, 67 to 37 per cent; Congress, 41 to 19 per cent; the chief executive, 41 to 23 per cent; the scientific community, 56 to 32 per cent; and even medical doctors, 73 to 61 per cent.

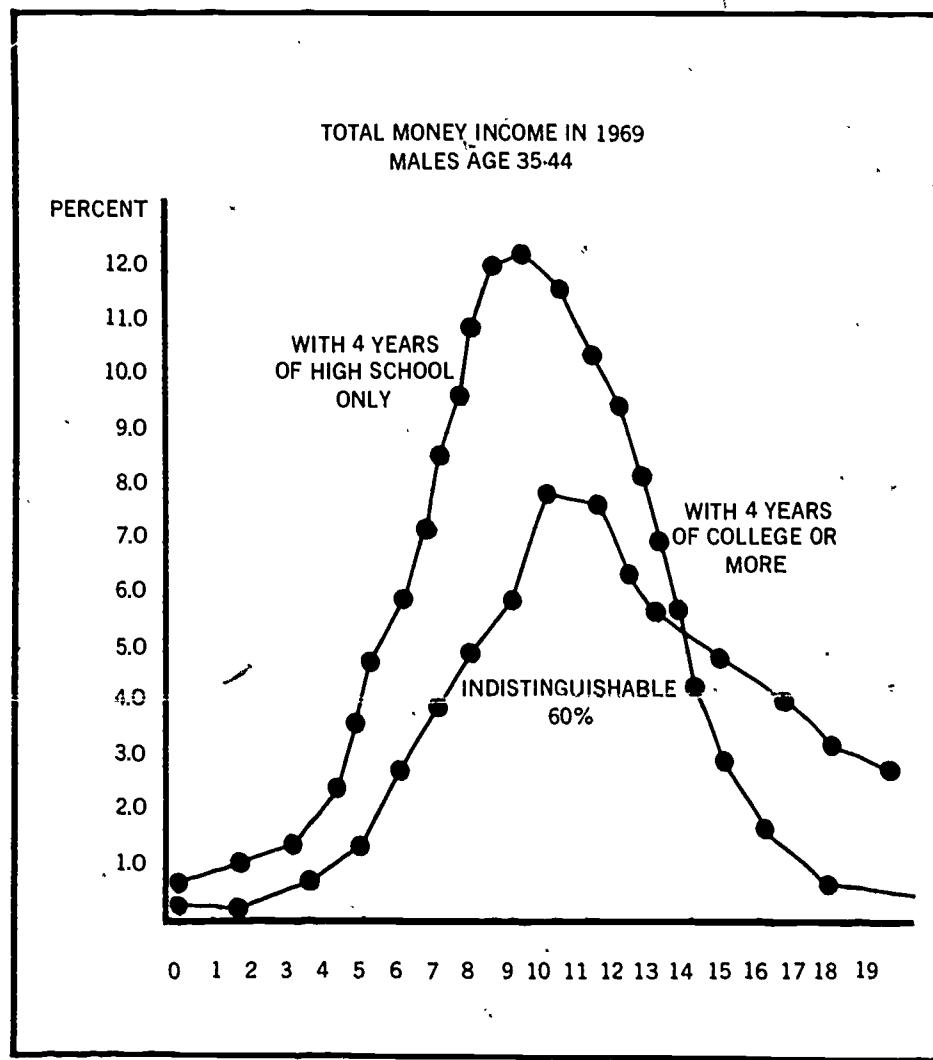


Figure 10

Figure 9 gives us an expanded view of the low level of confidence in American institutions. It isn't just higher education that people are angry at. Sometimes we get paranoid because we think that America lost faith in us. The fact is that all of America's social institutions are, right now, in a period of enormous strain because of the fact that there is a decline in the faith of the people regarding their ethics and their ability to do certain kinds of things. It reminds me of a tombstone in Laramie, Wyoming, which carries the inscription, "See, I told you I was sick." I hear a lot of academics saying that every year, and this is kind of an indication from the other side of the grave that it would be a good idea to pursue our problem.

Let's look at a few of the genuine gripes that Americans have about the higher education system as it now exists. First, our major premise, which is "Come to us and we will make you rich." If you look at income data in Figure 10 (This is for 1969; income data for some reason takes four years to get together), comparing people with four years of high school and those with four years of college, you do find that college graduates made more money but in the 60 per cent range you cannot tell from the level of income how many years of education a person has had. If you subtract doctors and lawyers from this group, it virtually removes the advantage.

It is important to realize that the person who goes to college still makes more money, but the amount of increase is less than it used to be. Figure 11 shows that in 1970 high school graduates were making about \$8,000 per year, and in 1972 they were making \$9,500, reflecting an increase of \$1,000. During the same period, college graduates went from \$11,100 to \$11,500, for a grand total of \$400 increase. College graduates still make more than people who have high school diplomas, but think of the life style in 1972 that you could carry on for \$11,100 compared to the life style you could carry on for \$11,500. Let's discuss some data, not yet published, which is an attempt to correlate lifetime earnings based on two factors: one is years of higher education; and the other is whether or not you join a labor union. The data thus far is overwhelming in support of the notion that if you want higher earnings over one lifetime, the best thing you can do is to join a labor union as quickly as possible. That is something to think about and while all of the data still has some problems it is something with which to concern ourselves. This trend is not necessarily bad, but it must be recognized. Street cleaners in San Francisco, for example, make \$13,000 a year while assistant profes-

U.S. YEARLY INCOME LEVELS, AGES 25-34 (MALE AND FEMALE)

1970	1972	INCREASE
HIGH SCHOOL GRADS: \$8,377	\$9,451	+\$1,074
COLLEGE GRADS: \$11,133	\$11,553	+\$420

(FROM STANLEY NOLLEN, GEORGETOWN U., DEC., 1973)

Figure 11

sors in the state college system make \$11,000. Look what street cleaners do. They do a very important job nobody else wants to do. As Clark Cristed once said, it may be wise to get used to paying people a lot of money to do disagreeable jobs that have to be done, and that we don't want to do. That is a painful thing to think about, but it is also kind of interesting. All you have to do is compare a teachers' strike with the garbage collectors' strike, and I think the point is clear.

One of the things that has made life more difficult for us is the fact that the courts have been telling us what to do. Up until 1968 there were virtually no court decisions having any direct impact on how we conducted post-secondary education. Then came a whole bunch, among them Griggs vs. Duke Power, which I considered a landmark decision. In that particular decision, the Supreme Court said that what Congress has forbidden is giving these devices and mechanisms (that includes both degrees and tests) controlling force unless they are demonstratively a reasonable measure of job performance. In other words, Griggs, who had been denied a job by the new power company because he could not pass a certain kind of test, which was a personality inventory, and did not have the proper educational credential, could not be denied access to that job unless it was shown that only the people who had that degree could pass the personality inventory test and could do the job. Because nobody could do that, Griggs won.

SUPREME COURT, IN GRIGGS VS. DUKE POWER (ON TESTS USED FOR JOB SELECTION, AS WELL AS DEGREES)

"WHAT CONGRESS HAS FORBIDDEN IS GIVING THESE DEVICES AND MECHANISMS CONTROLLING FORCE UNLESS THEY ARE DEMONSTRABLY A REASONABLE MEASURE OF JOB PERFORMANCE."

YOU CAN'T MEASURE JOB PERFORMANCE OF THOSE WHO ARE ONLY APPLICANTS.

YOU CAN:

- 1) DEVELOP PREDICTIVE (PROXY) MEASURES
- 2) SAMPLE ACTUAL JOB TASKS

QUESTION: DOES THE PH.D. DEGREE SATISFY THE CRITERION PREDICTING SUCCESS IN COLLEGE TEACHING, AS IN 1.)? IF NOT, IS IT A LEGAL DEVICE FOR REJECTING APPLICANT FOR TEACHING POSITIONS?

WHAT WOULD PREDICT COLLEGE TEACHING SUCCESS? CAN WE LEGALLY USE TESTS LIKE SAT FOR ADMISSIONS PURPOSES? WHAT DO SUCH TESTS PREDICT?

Figure 12

There are a lot of questions that the Griggs case raises which we haven't taken too seriously. But we ought to. Are you proud of the fact that at your institution you have to have the Ph.D. degree in order to get tenure? If you are, can you demonstrate that the people who have tenure are better teachers — or that they do a better job at whatever you want your teaching faculty to do than those who don't have Ph.D.'s? That is pretty tough demonstration to make. But if you deny some person tenure on the ground that he or she does not have a Ph.D., you may find yourself in a Griggs vs. Duke Power case. Because that person might well take you to court on the grounds that nobody can establish the fact that a Ph.D. indicates better teaching or better quality in terms of any other dimension of university performance. That doesn't necessarily happen, but you have to raise the question. Because Griggs raises all these questions about the importance of educational degrees and credentials as ways of people keeping people out of the job market. That seems to me to be terribly important.

We also have to raise some questions about using the SAT for admissions. Is that legal under terms of Griggs vs. Duke Power? So far as I know, an academic parallel to that case has never come up. However, we do have the Peter Doe case in the West. Peter Doe, as you know, graduated from high school in California and was functionally illiterate. He sued the state for over \$1 million on the grounds that he got a credential that was absolutely meaningless. I think we are going to see a lot more cases regarding consumer issues, in which the students are saying, "Look, this degree doesn't mean anything, and yet I paid a lot for it." The first such case I can recall was in 1968, in which a student graduated from Columbia University in June, and in July he received a bill for two semesters' back tuition which he hadn't paid yet. And in August, he turned around and sued the institution for breach of contract. In the hearing, he brought in a catalogue of the University and read from page 8 (and as you know, any college or university catalogue on page 8 has a statement that reads something as follows: "Graduates of this institution are knowledgeable, aware, trustworthy young men and women who are thoroughly familiar with and ready to assume their obligations as adults in American society.") He then produced his bill for two semesters back tuition and argued, "This is proof that I am not a responsible member of society because I owe \$14,000 in tuition debt." That is a funny case, except that there are 32 such cases now pending in state and federal courts. Our catalogues cannot speak with forked tongue.

The preceding cases, and others like them, raise a whole bunch of questions, and lead us back to our original concern with aptitude testing. We tested because we thought aptitude tests predicted grades. Well, they do, pretty well. They don't get all the variances, but they get a considerable amount. There is another question that we now must start asking, and that is, where the open learning thing is so important, what do grades predict?

David McClellan, past president of the American Psychological Association and professor at Harvard, looked at all of the studies in which people have tried to correlate grades in college with success in later life, using 14 different criteria for success, some of which were income, philanthropic contributions, interest in community affairs, and interest in the arts. Researchers had great difficulty demonstrating that grades in school or college are related in any other behavior of any importance whatsoever. It seems so self-evident to educators that those who do well in their classes must go on to do better in life that they systematically disregard evidence to the contrary. Therefore, when students enter what many student cultures refer to as "the after life," we are then worth something because we think we gave them something which will take them through it. We call it the GPA. Unfortunately, if you look at what the GPA means you get in a lot of real trouble. It is not the straight "A" students in law school who become the most

creative or famous lawyers. It is not the straight "A" students in medical school who become the most skillful important or creative physicians. We then have some problems in terms of what your system of evaluating people means in terms of what American society needs. That is another reason why the whole open learning strategy begins to be so important.

This is the last of our examples of our problems in making judgements about people. Figure 13 is a list of second-grade students in a relatively conventional second-grade classroom in the Far West. They are running according to their academic ability and achievement. The double x's are the high, and the single lines are the lows. Knowing what the list tells us about these second graders, we can make some pretty good predictions about their life. We know which people will probably go to selective public and private universities and colleges, which people will go to less selective institutions, and which people, if they are lucky, will get into the community colleges. And then there are what we regard as the drags of American life.

But our same 46 second-grade students test differently on some other attributes that might be of some interest to American society: creativity,

MULTIPLE TALENT SCORES OF 26 SECOND GRADE STUDENTS

STUDENTS	ACADEMIC	CREATIVITY	PLANNING	COMMUNI-	FORE-	DECISION
				CATING	CASTING	MAKING
1	++	+	-	0	0	0
2	++	+	-	0	-	-
3	++	-	0	+	-	-
4	++	-	0	0	0	0
5	++	-	-	0	0	0
6	++	-	-	0	0	0
7	++	-	0	0	-	-
8	+	++	+	++	+	0
9	+	++	+	+	0	0
10	+	0	++	0	+	+
11	+	+	+	++	0	0
12	+	+	0	0	+	++
13	+	++	0	+	0	0
14	+	-	-	-	0	-
15	0	+	-	++	-	0
16	0	++	+	+	0	0
17	0	-	-	++	0	0
18	-	++	+	+	0	0
19	-	++	0	0	0	-
20	-	++	-	0	0	0
21	-	++	-	0	-	-
22	-	+	++	0	0	-
23	-	-	0	++	0	0
24	-	0	0	-	+	++
25	-	-	0	0	+	+
26	-	-	-	-	-	++

LEGEND: ++=HIGHEST + = ABOVE AVERAGE 0=AVERAGE - = BELOW AVERAGE

Figure 13

planning, communicating, forecasting, and decision-making. Granted, such tests are all in a mid-range state of development, but still they are not all that bad.

As illustrated in Figures 14 and 15, not only do we learn different things at different rates, we also forget different things at different rates. Take the geography of Brazil for example. You learn it all about age 8, and you have forgotten it all about age 10. Similarly, with division of fractions most likely you get this kind of curve: you learn it fast and you forget it fast.

That leads us to a whole new set of questions? What was the worth of the investment we had to make to get that stuff into people's heads for such a

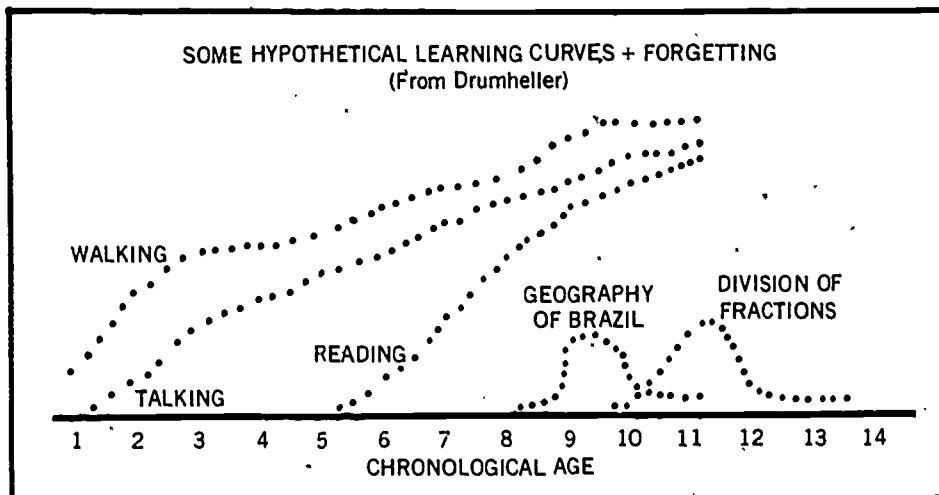


Figure 14

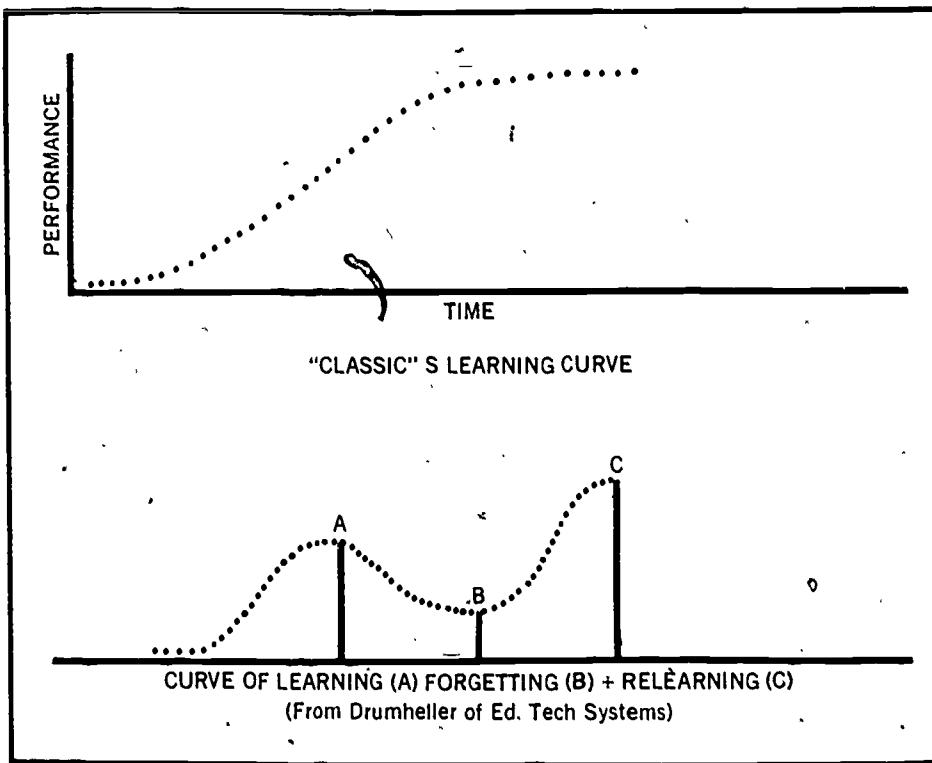


Figure 15

short period of time? Was it worth it? The usual comeback is, "Of course they forgot the content. What they retain is the value...the way of analyzing problems, the kinds of ways of going about looking for solutions to things. Well, I have bad news for you, because it doesn't seem that it works that way either. Let me present one study.

I would like to discuss a learning curve for a required natural science course which was taken by over 2,000 students in a major state institution. The students hate to take it. None of them are there because they want to be, and, in fact, we hate to teach it. In this particular class, all of the sections were given a weekly test, and the tests were rotated across each section. These tests were on the complete content of the course, so you could tell when during a semester learning took place. You get a rough learning curve, as shown in Figure 17. For the first dozen weeks, this course was zilch. The kids were shucking it off, instead of doing the work in their major and other courses that interested them. They were learning how to date, they were learning all the other things which are on the real freshman agenda, many

WHAT HAPPENS AFTER FORGETTING?

- 1) LEARNER CAN RECLAIM ORIGINAL LEARNING LEVEL WITH PRACTICE
- 2) LEARNER CAN RECLAIM ORIGINAL LEARNING LEVEL WITH PRACTICE AND INSTRUCTION
- 3) LEARNER CAN RECLAIM ORIGINAL LEARNING LEVEL ONLY WITH COMPLETE PROGRESS
- 4) LEARNER CANNOT RETURN TO ORIGINAL LEARNING LEVEL

WHAT SORTS OF THINGS DECLINE WITHOUT USE, NEED MAINTENANCE?

- 1) STUDY SKILLS (READING SPEED AND COMPREHENSION, WRITING ABILITY)
- 2) ACADEMIC SKILLS (SOLVING EQUATIONS, EDITING, DOING ANALOGIES, DEVELOPING HYPOTHESIS, FORMULATING PROBLEMS, ETC.)
- 3) PRACTICAL SKILLS (USING A CALCULATOR, RUNNING A LATHE, TYPING, KEY PUNCHING, DRIVING, ETC.)

QUESTION: WHAT IS THE MOST DESIRABLE LEVEL OF LEARNING?

MAINTENANCE? HOW LONG SHOULD THE LEVEL BE MAINTAINED? AT WHAT COSTS, WHAT BENEFITS? A CAR IS GUARANTEED FOR A GIVEN TIME AND USE PERIOD. CAN WE "GUARANTEE" ANYTHING ABOUT EDUCATION?

Figure 16

of which don't have too much to do with classwork. Then there was the mid-term, and it was sort of underwhelming. It didn't produce any great results. Then, Week 10, all of the section people said to all of their students, "Okay, if you don't get busy and start to study, you are going to flunk this course."

B. F. Skinner tells us that negative reinforcement never leads to learning. But here we have living proof that he is wrong. Because a week later, the scores shot up to a mean score of 68 and, by the end of the semester, WOW, a very successful course! It was tough to teach because those kids hated that stuff when they came in and they hated it when they left, but it really was a good experience because they got up to 68 mean score.

After 16 weeks had elapsed, the same testing procedures were repeated with the successful class. As you can see in Figure 18, there is a remarkable parallel between the slope of the learning curve and the slope of the forgetting curve. To the point where, 32 weeks after this little \$52,000 venture began, the students were within three percentage points of where they started.

Nevertheless, the people who taught this course said that this material is absolutely essential to every American who is ever going to make any kind of literate policy decisions on scientific matters as a voter American. Of course if that is true, then all national elections have to be held between semesters!

Now, let's look at another kind of course, an elective course in the philosophy of religion. Students are there because they like it, the faculty members are there because they like to teach it. Figure 20 shows the learning curve from Week One is on an upward trend. That suggests that there is some intrinsic stuff that is going on, and probably, if you had measured the

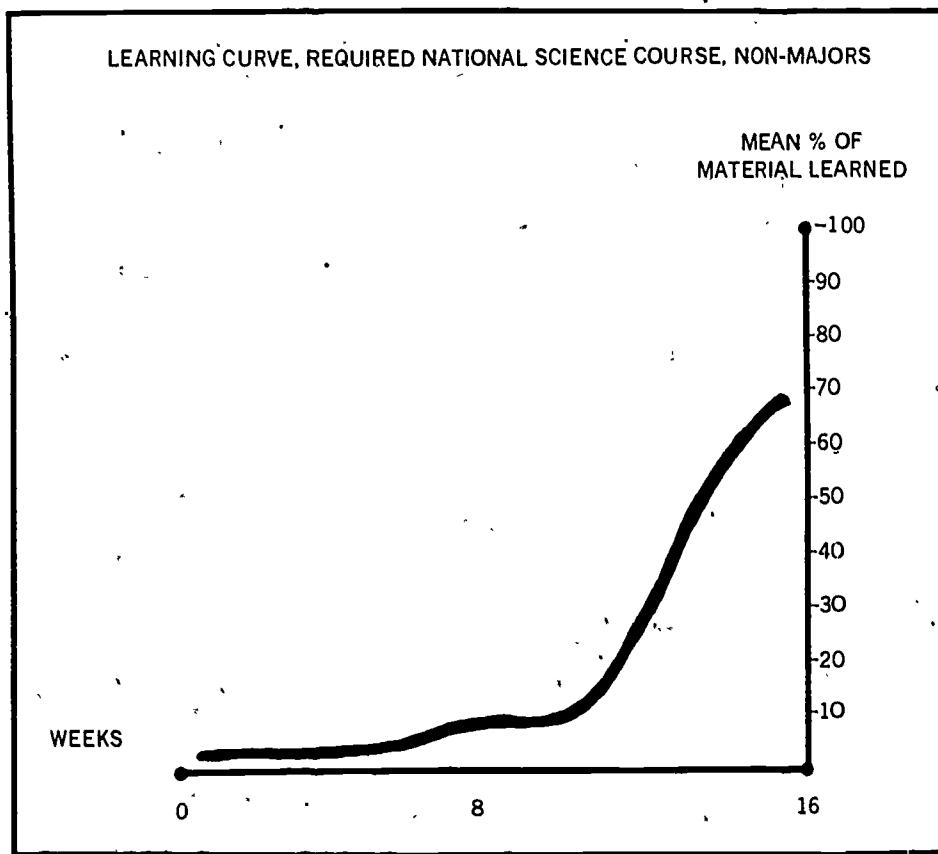


Figure 17

students' knowledge before they started the course, you would be able to see some change. The mid-term again doesn't seem to do much. If there is one conclusion from these studies, it is that mid-terms aren't terribly good at reinforcing. But the real surprise comes in the second semester. The students are no longer taking philosophy of religion; they had their measure of the content of strategies. Yet, their analytical skill in philosophy of religion keeps on going up. "Impossible," we say, "They're taking the course then." Well, we have to get over that notion because it can be demonstrated in a variety of ways that people learn some very difficult and very analytical stuff when they are not taking courses.

Those, then, are the major critiques. Now, let's look at the response higher education and post-secondary education have made to them, as demonstrated in Figure 21. Almost out of desperation, there was the beginning of a large number of new curriculum packaging formats, so we started modularizing like mad, particularly at Grand Valley State, which has a college which is all modular. No courses—500 or so modules—that is all they have. The audio-tutorial format was established at Purdue; there is the Keller Plan, which is a fascinating kind of thing, featuring learning resource centers, in which students go in and dial into a system, are used at Oklahoma Christian. And there is the intensive course idea where you study one course the whole period.

New kinds of calendars, structures, off-campus learning—these are new ways of packaging the same old stuff. One of the things that concerns me

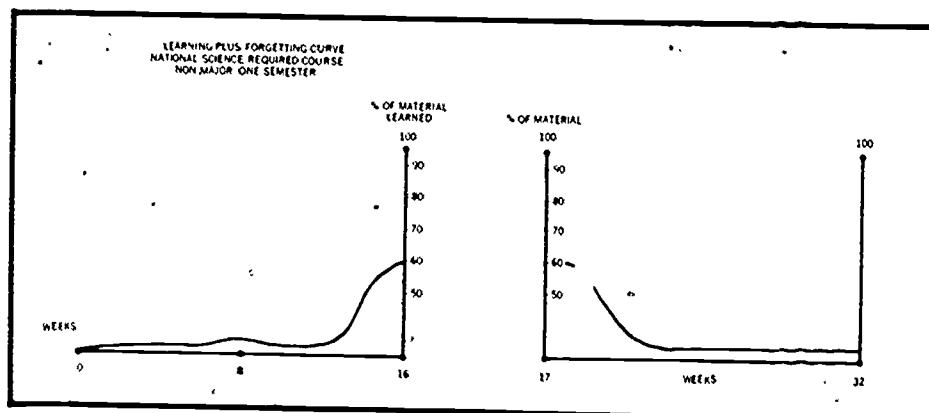


Figure 18

SOME VIEWS OF CURRICULUM:

- 1) THAT WHICH IS HOPED (COLLEGE AND DEPARTMENTAL GOALS AND OBJECTIVES, ALSO FOR COURSES, MAJORS, DISTRIBUTION)
- 2) THAT WHICH IS TAUGHT (LECTURES, BOOKS, TAPES, LABS, ETC.)
- 3) THAT WHICH IS LEARNED, (CHANGES IN STUDENT FUND OF INFORMATION AND SKILLS, ALSO VALUE AND ATTITUDE CHANGE)
- 4) THAT WHICH IS LEARNED, RETAINED AND USED (A VERY SMALL PROPORTION OF MOST COURSES OF STUDY, EITHER AS #2 OR #3 ABOVE) MUCH OF #3 DOES NOT OCCUR IN CLASSROOM SETTINGS AT ALL.

Figure 19

very much right now is that we are very interested in transmitting the same old stuff through a tube to a new audience. I am interested in getting some better ways of looking at what the same old stuff ought to be. This is something on which we really need to work. For every technologist in every project we ought to have a semanticist, and we should have some kind of person who knows something about the intellectual nature of that particular content.

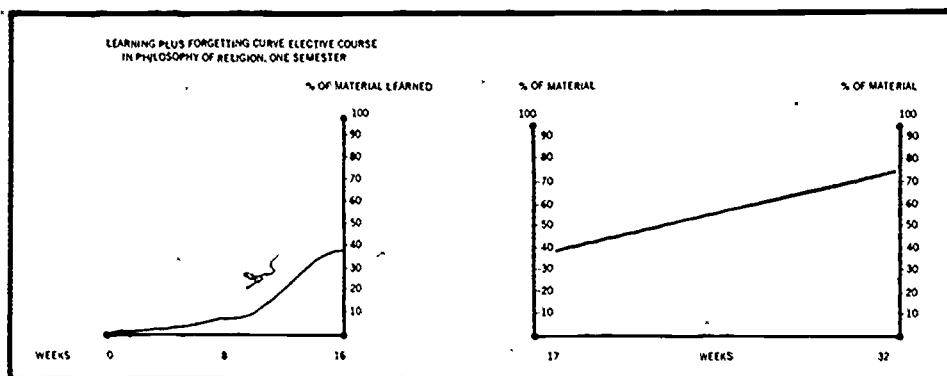


Figure 20

CURRICULUM "PACKAGING" FORMATS

- 1.) MODULARIZATION (GRAND VALLEY STATE, COLLEGE IV, MANY OTHERS)
- 2.) AUDIO-TUTORIAL (PURDUE)
- 3.) "KELLER PLAN" (LECTURES OF COURSE MIMED, SOME MODULES, FACULTY USED AS CONSULTANTS)
- 4.) LEARNING RESOURCES CENTERS (OKLAHOMA CHRISTIAN COLLEGE, ORAL ROBERTS, OAKLAND-MICHIGAN)
- 5.) INTENSIVE COURSE PLANS (COLORADO) AND NEW CALENDARS-4-1-4
- 6.) OFF-CAMPUS LEARNING
- 7.) PROGRAMMED INSTRUCTION (PLATO-ILLINOIS)

EVALUATION FORMAT

- 1.) COMPETENCY-BASED LEARNING (STERLING, MARS, HILL, ALVERAD, COLLEGE IV AT U. MASS.) BOWLING GREEN, ALSO IN ED AND NURSING SCHOOLS)
- 2.) CREDIT BY EXAM (CLEP, CAEL)
- 3.) CONTRACT LEARNING (NEW COLLEGES AT ALABAMA AND FLORIDA, OTTAWA, MORGAN STATE, 25 OTHERS)
 - A.) PROFESSIONAL GROWTH CONTRACTS FOR FACULTY AND ADMIN. HAMPSHIRE, GORDON COLLEGE, SEVERAL COMMUNITY COLLEGES
 - B.) MBO-BASED ON ATTAINABLE OBJECTIVES-RELCV
- 4.) FIELD EXPERIENCE PROGRAMS (MARS HILL) PORTFOLIOS, LOGS AND DIARIES, SUPERVISOR REPORTS, GAMES AND SIMULATIONS, ON-SITE EVALUATIONS, JURY PANELS, CLIENT REPORTS

Figure 21

In addition, we developed a lot of evaluation formats, illustrated in Figure 22, which quite often are based on the portfolio or evaluation device the students can bring in. So we responded to something that really looks pretty coherent in a competency-based program.

The competencies chart in Figure 23 shows a philosophy that can really pull a college together. Let's say you have an objective to be able to reason, and that is something we want to do in terms of a whole college. In biology that translates into certain competencies that you have for the major; every biology major must know how to do experimental techniques. That breaks down into a course called Biological Methods, and in that course the student must understand the meaning of control. That translates into a sub-course unit in which the student learns about interval measurement. When you get some direct measures of whether a student can do that, you have something that builds toward that college-wide objective. It is the same thing with philosophy and sociology. At the start, the student knows how to use statistical methods of inquiry, so you force him into taking a course in statistics. And he has to know about sampling and about random sampling, so that leads you to an item which is right out of Robert F. Mager's little book, like—given a telephone book—produce a random stratified sample of 200 men and 200 women. That, incidentally, is a lot harder than it looks, for some very interesting reasons about what happens in telephone books and for the fact people whose last names start with "A" are significantly different in a lot of ways from people whose last names start with Z.

In addition to competency-based programs, which are an attempt to build a coherent structure, we also have a lot of interest in faculty development, particularly released time for completed degrees, new course planning, developing modules, and video-taping classes. There is a great deal of interest in video tapes.

EVALUATION PROCEDURES

- 1.) PORTFOLIOS (PROBLEM: ANECDOTAL, BASED ON ESSAYS, FEW ATTEMPTS AT STANDARDS-NEEDS REFERENCE CHECK-LIST)
- 2.) GAMES AND SIMULATIONS: (PROBLEM: USED MAINLY FOR SUMMATIVE PURPOSES)
- 3.) LEARNING CONTRACTS (PROBLEM: GOOD ON CLEAR CRITERIA AND TECHNIQUES, POOR ON STANDARDS-NEEDS CHECKLIST)
- 4.) JURY PANELS (PROBLEM: OFTEN USED WITHOUT CLEAR CRITERIA OR STANDARDS. JURY DOESN'T AGREE ON EITHER OF THESE IN ADVANCE OF EVALUATION)
- 5.) LOGS AND DIARIES (PROBLEM: LACK OF CONTINUITY, OFTEN NEGLECT CRITICAL EVENTS, LOW STUDENT MOTIVATION. POTENTIAL HIGH, STUDENTS NEED TRAINING)
- 6.) SELF-SCORING MODULES (PROBLEM: HARD FOR STUDENT TO ASPIRE TO MORE PERFORMANCE THAN MODULE ALLOWS)
- 7.) FIELD REPORTS (PROBLEM: OFTEN NO LINKAGE WITH ON-CAMPUS ACTIVITY, NO WAY TO COMBINE ASSESSMENTS. ALSO, USUALLY SUMMATIVE; COULD BE FORMATIVE ALSO.)

Figure 22

Some other institutions have even begun to look at how they spend their faculty time, as illustrated in Figure 25. Time, after all, is the most precious asset you have. You may think that buildings are more expensive, but in the long run, there is no question that faculty time is more expensive. If you promote a 30-year-old faculty member to tenure, you have just made a decision involving expenditures of well over half a million dollars if he stays with you until the end of time. Think how businesses make half-million dollar decisions, and think how we appoint people to tenure. In terms of committees, for example, Austin University looked at its committee structure and found that it was spending an incredible amount of money just in terms of the central committees at the University. In terms of people's time, it was \$400,000 for one year. For that we got five decisions and one of them was wrong.

Turning to our quest for the new adult, surprisingly enough, more adults were studying in non-college and non-university settings than in college and university settings in 1969. Where were they? IBM, Xerox, Breaking Out, Kodak, newspapers, television—these media were more appealing. More people were being fascinated by what they could offer than by colleges or universities. So even then, those adults in learning programs who were in colleges and universities were in the minority. There were more people outside than inside.

"TO BE ABLE TO REASON"			
LEVEL I: COLLEGE COMPETENCIES	BIOLOGY	PHILOSOPHY	SOCIOLOGY
LEVEL II: MAJOR COMPETENCIES	CAN USE EXPERIMENTAL TECHNIQUES	CAN ANALYZE AND PRODUCE PHILOSOPHICAL ARGUMENTS	KNOWS HOW TO USE STATISTICAL METHODS OF INQUIRY
LEVEL III: COURSE COMPETENCIES	BIOLOGICAL METHODS	PHILOSOPHICAL REASONING	STATISTICS
	UNDERSTAND THE MEANING AND USE OF CONTROLS	UNDERSTANDS INDUCTIVE ARGUMENTS	KNOWS HOW TO USE SAMPLING TECHNIQUES
LEVEL IV: COURSE MODULES OR SUB-COURSE UNITS	INTERNAL MEASUREMENT	INDUCTION	SAMPLING
	UNDERSTANDS AND CAN USE SPATIAL AND TIME POINTS	UNDERSTANDS THE "NEW RIDDLE OF INDUCTION"	UNDERSTANDS RANDOM SAMPLING
LEVEL V: DIRECT MEASURES	USE OF TIME POINTS	PREDICATES	INTERPRETS SAMPLES
	CAN DESIGN AND RUN AN EXPERIMENT REQUIRING TIME CHECKS	CAN PRODUCE A "GRUE-LIKE" PREDICATE	CAN DRAW AND INTERPRET A STRATIFIED PROBLEM SAMPLE
LEVEL VI: ITEM FOR DIRECT MEASURES	CALCULATE THE TEST TIME INTERVALS FOR A STUDY OF OXYGEN LEVELS IN TISSUE DEGENERATION	GIVEN THE PREDICATE "IS A BOY" AND "IS A GIRL", PRODUCE A PAIR OF CONTRADICTORY PROJECTABLE PREDICATES	GIVEN A TELEPHONE BOOK, CAN PRODUCE A RANDOM STRATIFIED SAMPLE OF 200 MEN AND 200 WOMEN

Figure 23

FACULTY DEVELOPMENT ACTIVITIES

RELEASED TIME: DEGREE COMPLETION
TRAVEL, STUDY
NEW COURSE PLANNING
DEVELOPING MODULES
VIDEO TAPING AND ANALYSIS
VISITS TO OTHER CAMPUSES
SEMINARS ON TEACHING PROBLEMS
PROFESSIONAL GROWTH CONTRACTS
MINI-GRANT PROGRAMS (WITH EVALUATION)
SOCIAL EVENTS FOR FACULTY
SKILLS WORKSHOPS: ADVISING (MENTORING)
QUESTIONING, LECTURING, SEMINARS
USING A-V MATERIALS
KELLER PLAN
MICRO-TEACHING
GRADING
COMPETENCY CURRICULUM
FACULTY LOAD ANALYSIS
NEWSLETTER ON TEACHING, "EVENTS"
FACULTY LOUNGE WITH LITERATURE FROM HIGHER EDUCATION
AVAILABLE

Figure 24

FACULTY LOAD INDEX BASED ON ALL EDUCATIONALLY RELEVANT ACTIVITY. ONE SEMESTER=30 UNITS, NOT "HOURS"

STUDIO ART COURSE 5 UNITS
SEMINAR COURSE 6 UNITS
SCIENCE LAB + LECTURE 7 UNITS
ADVISING 5 FRESHMEN 1 UNIT
COORDINATING 1 INDEPENDENT STUDY 1 UNIT
CHAIRING DEPARTMENT 4 UNITS
CHAIRING DIVISION 6 UNITS
SERVING ON MAJOR COMMITTEE 2 UNITS
DIRECTING SENIOR THESIS 2 UNITS
PRODUCING PLAY, ART SHOW, CONCERT 4 UNITS
COACHING MAJOR SPORT 9 UNITS
PREPARING NEW COURSE 4 UNITS
COACHING MINOR SPORT 4 UNITS
ADVISING STUDENTS ON WRITING OF LEARNING CONTRACTS 8 UNITS

Figure 25

SUGGESTED OUTCOMES OF FACULTY DEVELOPMENT

- NO. OF COURSES SUBSTANTIALLY REVISED
- NO. OF NEW COURSES ADDED
- EFFECTIVENESS OF COURSE EVALUATIONS
 - A. BETTER (MORE USEFUL) STUDENT RATINGS
 - B. INDIVIDUAL FACULTY USE OF VIDEO TAPE
 - C. COLLEAGUE CLASS VISITATIONS
 - D. DEPARTMENT MEETINGS ON TEACHING
- REDESIGN OF FACULTY LOAD, MORE EFFECTIVE USE OF FACULTY TIME
- IMPROVED FACULTY MORALE (NOT INITIALLY)
- QUALITY OF DEPARTMENTAL DECISION-MAKING
- INCREASING EQUITY OF FACULTY LOADS
- ABILITY OF FACULTY TO DEVELOP CLEAR GOALS KNOW WHEN GOALS ACHIEVED"
- INCREASED FACULTY SKILL LEVELS
 - DISCUSSIONS, QUESTIONING, LECTURING, EXAMINING, ADVISING
- SELF-CONSCIOUSNESS OF FACULTY RE: TEACHING
- HIGHER LEVELS OF STUDENT LEARNING, DESIRE
- NO. OF "ARROWS IN THE QUIVER" OF EACH TEACHER
- GREATER AWARENESS OF INSTRUCTIONAL COSTS
- COHERENCE OF COURSES ↔ MAJORS ↔ PROGRAMS

Figure 26

COMMITTEES

- 1.) CUT DOWN IN NUMBER OF COMMITTEES
- 2.) CLARIFY FUNCTIONS OF EXISTING COMMITTEES
- 3.) ELIMINATE PARALLEL STRUCTURES (DUPLICATION)
- 4.) ALLOW ONE DEBATE, AVAILABLE TO ALL (OPEN HEARING)
- 5.) CONSIDER BROADLY BASED SENATE
- 6.) SOME COMMITTEES ADVISORY ONLY (TRIAL BALLOON)
- 7.) RELATE DECISIONS-MAKING & IMPLEMENTATION
- 8.) DECREASE SIZE OF COMMITTEES (5-8)
- 9.) GOOD ACCESS TO FINANCIAL INFORMATION
- 10.) TRAINING PROGRAMS FOR COMMITTEES
- 11.) ELIMINATE OLIGARCHIES

Figure 27

Let's look at the kinds of programs that have been developed for new learners, as shown in Figure 28. This can be studied in greater detail in Leland Medsker's new book, "Extending Opportunities for a College Degree," published by the Center at Berkeley. There are four things you can do: first, extend the time you have the campus open; second, develop a liberal studies kind of program in which you try to get to the needs of adults; third, initiate individualized study or learning contract programs; and fourth, offer degree by examination.

The new learners are supposed to be women, ethnic minorities, blue collar working class, the unemployed, those who are new to higher education, according to the new ideology. According to four different data sources, the new learners are actually rather heavily male, caucasian middle-class, and of managerial backgrounds. They are almost all employed full-time, they have some previous college experience, they are 35 years old, they earn about \$12-15 thousand a year, and they are very high in both the desire to achieve and persistence. So, what we have currently in the new learner is not the group that we sought, but the people who are simply an older version of the 18 to 24-year-old college students. In other words, the mission of reaching

TYPES OF PROGRAMS FOR "NEW LEARNERS"

APPROACH	PROGRAM	INSTITUTION
EXTENDED CAMPUS (FLEXIBLE SCHEDULING, TIME, RESIDENCY, DELIVERY)	COURSES, CONVENTIONAL CURRICULA, DEGREE REQ	JOHN HOPKINS EU/UC, ED/C. BGS/ROOSEVELT
LIBERAL STUDIES/ADULT DEGREE. RELATE ADULT NEEDS TO LIBERAL STUDIES	ALTERNATING SELF-STUDY & RESIDENT SEMINARS	BLS-OKLAHOMA BLS-SYRACUSE GODDARD-ADVANCE DEGREE PROGRAM BGS-ROOSEVELT
INDIVIDUALIZED STUDY(LEARNING CONTRACTS, VARIED LEARNING RESOURCES, EXP. COMMUNITY-People AND INSTITUTIONS, LIBRARIES, MUSEUMS)	INDIVIDUALIZED, CONTRACTS- FEW IF ANY "REQUIRE- MENTS" FOR ALL STUDENTS	ESC. MMS/C CC-VERMONT FIU-EXT. DEGREE LIFE LAB-MIAMI-DADE
DEGREE BY EXAMINATION. DEMONSTRATE MASTER BY EXAMINATIONS- NO COURSES REQUIRED	PRESCRIBED OUTCOME CURRICULA NON-INSTRUCTIONAL	NEW YORK REGENTS EXTERNAL DEGREE

Figure 28

people who have never been reached by higher education or any form of post-secondary education is still before us. And that mission is terribly important.

As we consider new methods, we must think about how we are going to evaluate them. There are only three evaluation questions that matter, whether you are at Harvard or Miami-Dade, and whether you are evaluating a program or a student or a faculty member. They are: First, what are the criteria (or what are the things that we want the person or the program to do)? Second, what are the standards? And third, is the technique effective?

THE "NEW LEARNERS" SHOULD BE:

- 1) WOMEN
- 2) ETHNIC MINORITIES
- 3) BLUE COLLAR, "WORKING CLASS"
- 4) UNEMPLOYED
- 5) THOSE NEW TO HIGHER EDUCATION

THE "NEW LEARNERS" ARE:

- 1) MALE (60-90%)
- 2) CAUCASIAN (85%)
- 3) MIDDLE CLASS (WHITE COLLAR, HEAVY FROM MANAGERIAL AND PROFESSIONAL)
- 4) EMPLOYED FULL-TIME (95%)
- 5) SOME PREVIOUS COLLEGE EXPERIENCE (50% w/4 YEAR PROGRAMS)
- 6) 35 + YEARS OLD
- 7) MAKING \$12-15,000 / YEAR
- 8) HIGH ON DESIRE TO ACHIEVE, PERSISTENCE, INDEPENDENCE, MOTIVATION (AN "OLDER VERSION" OF CONVENTIONAL 18 TO 24-YEAR-OLD COLLEGE STUDENTS)

Figure 29

EVALUATION PROCESSES

- 1) CRITERIA: WHAT ARE THE SKILLS, BEHAVIOR, ATTITUDES, ETC., WE WISH TO MEASURE?
- 2) STANDARDS: HOW HIGH A LEVEL OF PERFORMANCE DO WE REQUIRE?
- 3) TECHNIQUE: WHAT MEASUREMENTS AND INSTRUMENTS CAN WE USE TO TEST FOR THE DESIRED 1) SKILLS, BEHAVIORS, ATTITUDES, ETC. AND 2) THEIR LEVEL OF ATTAINMENT?

Figure 30

My contention is that the greatest problem is in the area of standards. How high a level of performance do we require and why? How do we justify a given learner performance?

Some who are in competency-based programs say, "That question doesn't matter anymore because we have defined competencies, and therefore we don't need to worry about standards. If you are competent, you are competent and that is all there is to it." But is that really true? Let's take a very simple competency like changing a tire on a car. What could be simpler than that—either you can do it or you can't. When you think about it, you have a lot of questions there. Does the standard refer to changing any tire on any car? How about trucks and motorcycles? Do you have to know how to use equipment like air wrenches? Do you have to know how to repair leaks in tires? How much time are you going to give this person in order to show his competency in changing a tire? You know that if you have certain kinds of cars the threads on one side of the car are reversed from the other side, so if you try to put the wheel on the same way, you strip those little gems that cost about \$100 to get replaced. So do you want your competent person to know about wheel weights?

It appears, then, that competency-based programs cannot get away from the question of standards. We have gotten much better in most of the open learning programs in terms of specifying criteria, and we know what kinds of judgments we can make, but we really haven't defined standards as well

SKILL HIERARCHIES (HIGHER SKILLS AT TOP)

DATA SYNTHESIZING	PEOPLE MENTORING	THINGS PRECISION WORKING SETTING UP
COORDINATING	NEGOTIATING	MANIPULATING
ANALYZING	SUPERVISING	OPERATING } CONTROL DRIVING }
COMPUTING COMPILING	CONSULTING INSTRUCTING TREATING	HANDLING: FEEDING
COPYING	COACHING	ATTENDING
COMPARING	PERSUADING DIVERTING	
	EXCHANGING INFORM	
	TAKING INSTRUCTION HELPING SERVING	

(FROM DICTIONARY OF OCCUPATIONAL TITLE, VOL. II)

Figure 31

as we might. Standards must come from some kind of reference group, and there are about three or four of them. The first possible reference group is all previous performers; in other words, the faculty says that according to all students taught, you get a "B". The second is all learners of the current group in which the guide is up for 10 years. You are told by the Dean, that you are being judged against Bill, Joe, Suzy, and Jane and two of the four of you will get tenure. That is the current group. And the third possible reference group is performance on some kind of unspecified platonic ideal. Here, the tenure decisions are made somewhat on the basis of "I know 'A' when I see one," and I have never seen one. The other possibility is comparing present performance with previous performance of the same person. This leads us away from norm reference tests and leads us toward criterion reference testing in which we say that we will develop some ways of showing you what your current mistakes are so that you will do better in the future.

We are beginning to understand a lot of things about how you can look at human learning, particularly along certain kinds of skill hierarchies, as shown in Figure 31. There are skills involved in analysis of data, starting with comparing and copying and moving up to coordinating and criticizing. There are skills in working with people, which begin with taking instruction and exchanging information and lead up, in terms of difficulty, to negotiating. And there are skills in working with things which go from one end to the other. Now we are beginning to think about skill hierarchies in all these areas of working with data, working with people, and working with things, and about how we can develop an evaluation system that will help an adult launch on his particular road upward. That approach requires paying a great deal more attention to diagnostic techniques than we have developed before.

We also have to remember that all adults are "growing up"—that is, going through a series of developmental stages throughout life. Art Chickering discussed this, in terms summarized in Figure 32. As you are teaching adults, you must remember that they are going through some particular problems: leaving the family, probably by joining the army or going to college; getting, reacting to, and/or losing a mentor; the funny settling down and moving up period, about age 30-38, when you want to settle down and have a home and raise your family, but you want to be able to move at a moment's notice when some job like being director of NIE comes...The con-

VALUE EVOLUTION (PERRY, KOHLBERG, KEVINGER)

SELF-DIRECTION, BASED ON "GYROSCOPE" OR LARGER VIEW OF LIFE THAN SELF-INTEREST ALONE. CAN USE VALUES TO MAKE CHOICES, NOT DEPENDENT ON EXTERNAL AUTHORITY.

RELATIVISM, AMBIGUITY, NO VALUE CORE TO ALLOW FOR CHOICE, LACK OF INTERNAL DIRECTION, ALL OPTIONS SEEM OF EQUAL WORTH. CONFUSION, OFTEN LEADS TO APATHY, WITHDRAWAL.

AUTHORITARIANISM, ONE WAY TO LOOK AT THE WORLD—THE RIGHT WAY, COMPLETE FAITH IN EXTERNAL AUTHORITY, REFLEXIVE CERTAINTY, HIERARCHY, LOYALTY, STABILITY, ORDER, LOW TOLERANCE FOR AMBIGUITY. NO NEED TO TEST OUT POINTS OF VIEW.

Figure 32

flicts there are very real and very important, and if you don't know what a person is going through, you have trouble dealing with him. Then there is the mid-life transition (39-43), when people start to have some questions like, "Did I marry the right person? Did I go to the right college? Am I in the right job?" They start fantasize about what things might be like, and that is why I call that stage "middlescence," because it is so much like adolescence, only you've grown a little older. And there is the restabilization period at about 43-50, in which people tend to put things back together, and if they are still married, the marriage begins to work a little better. Then there is the finishing up stage, 50-65, which has not been studied much at all.

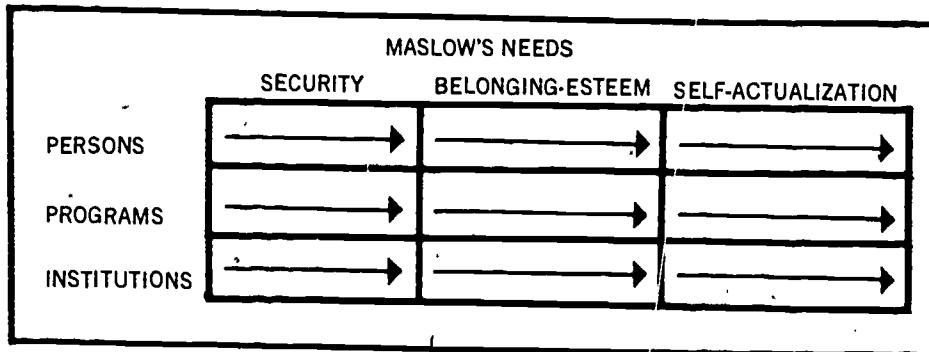


Figure 33

ISSUES TO DISCUSS

- 1) GIVE ADULTS WHAT THEY WANT OR WHAT THEY NEED?
- 2) HOW TO PREVENT TREND OF NONTRADITIONAL PROGRAMS MOVING TO GRADUATE LEVEL?
- 3) HOW TO DEVELOP PROGRAMS THAT CAN SHIFT AS DEMAND SHIFTS?
- 4) HOW TO DEVELOP PROGRAMS THAT CAN CROSS STATE BOUNDARIES? (U.M.A.)
- 5) HOW TO MEET WIDE RANGE OF STAGES OF ADULT DEVELOPMENT IN CLASS AGED 18-72?
- 6) SHOULD QUOTAS BE SET UP ON MIDDLE CLASS STUDENTS? SHOULD LOWER CLASS STUDENTS BE ACTIVELY RECRUITED TO GET THE "RIGHT" MIX?
- 7) CAN WE DELIVER SUBSTITUTES FOR RESIDENCE? (PEER GROUP MEETINGS, WEEKEND RETREATS, PHONE CONVERSATIONS OF GROUPS, SOCIAL EVENTS)
- 8) CAN WE LEARN TO DEAL WITH THE PERSON WHO HAS NO COLLEGE AT ALL? (HOW TO BUILD UP SKILLS AND CONFIDENCE?)
- 9) MANY OF THE "NEW" NEW LEARNERS ARE EXCELLENT TALKERS BUT POOR WRITERS. MUST WE MAKE THEM LEARN TO WRITE MIDDLE CLASS ACADEMIC PROSE?
- 10) WHAT NEW KINDS OF COUNSELING PROGRAMS WILL BE NEEDED FOR LIFELONG LEARNING?
- 11) SHOULD WE MEASURE THE ATTAINMENT OF CREDIT HOURS OR COMPETENCIES?

Figure 34

So adults are growing up. Maybe they are doing something like Maslow's idea that they grow up through certain kinds of stages, which can be violated. First they have to feel that they belong and they have to feel some kind of security and self esteem. And before they can go on to all such good things as knowledge, truth, goodness, and beauty, they must feel some kind of security and self-esteem.

Turning to something that has not been made public before, but is terribly important, when we think about adults needs in higher education, we tend to think in cognitive terms alone. Data which comes from California Field Poll is fascinating in that it reveals the adult's concern for himself as a person, which has nothing to do with getting a degree or taking a course. Forty-one per cent want to take some kind of course, according to this particular survey which is representative of the California population as a whole, but 31 per cent want some kind of assessment of their personal competencies: What am I good at? What kinds of personal growth could I engage in? What is my potential? And that has nothing to do with getting a degree or taking a course. Forty-eight per cent want to test strengths, weaknesses, certain skills and subjects, and 27 per cent want information about educational opportunities in the region. But one of the most striking figures shows that 20 per cent of the population were willing to admit that they felt they had a need for personal counseling. This information was obtained in a face-to-face interview with another human being. One-fifth of the adult population in California, at least in this sample, were willing to say that they needed some kind of personal counseling. What they need is what most counseling departments are not prepared to offer, and we suggest that there is an enormous job there that needs to be done in terms of some kind of social service. Sixteen per cent want to put together some kind of a record of all their job and educational experience, just for the fun of it, just to see where they have been. All of that, then, is simply an indication that there are a large number of American adults who have strong interests in the affective domain, or in getting services that might make them more interesting human beings or make their lives a little better. A very unusual kind of system including feeders that lead into diagnostic centers might be needed to make this come about.

The data is now persuasive enough to make me feel that a fairly significant sector of the American population is not terribly happy with the way it is spending its life, and it wants something a little more, although it is not

CAMPUS ENVIRONMENTS CHARTS:

- 1) INTELLECTUAL (STUDENT AS APPRENTICE SCHOLAR)
- 2) VOCATIONAL (STUDENT AS FUTURE WORKER- NOT COLLEAGUE)
- 3) PROTECTIVE (STUDENT IS TO BE INSULATED FROM EVIL, BOTH WITHIN AND WITHOUT)
- 4) EXPRESSIVE (STUDENT IS TO BE FREE TO EXPLORE LIMITS BY TRYING)
- 5) COLLEGIALE (STUDENT IS TO LEARN TO MAKE FRIENDS, SOCIAL LIFE IS MAJOR COMPONENT OF "CURRICULUM")

WHERE DOES YOUR INSTITUTION FIT?

Figure 35

quite sure what it is. There is a belief that, "I am capable of doing more than I am currently doing." Maybe we should have something like a regional examining institute, in which we can separate out credentials, including what businesses want, and degrees, which is what colleges and universities offer. If you get a credential, it means that you can do a certain kind of job. The degree means that you have a certain kind of intellectual skill that means you can engage in certain intellectual activities. The degrees and credentials could be separated out so that we wouldn't have to be bothered by the Griggs case.

YOUR CAMPUS WILL SURVIVE IF YOU HAVE

- 1) CLEARLY FOCUSED MISSION.
- 2) PROGRAMS THAT CLEARLY REFLECT THE MISSION AND "ADD UP" TO IT.
- 3) SOME LIMIT TO STUDENT DIVERSITY (NEEDED FOR CAMPUS "COMMUNITY").
- 4) COOPERATIVE RELATIONSHIPS WITH OTHER INSTITUTIONS.
- 5) MEASURES OF COST-EFFECTIVENESS THAT RELATE TO 1 AND 2. ABOVE.
- 6) DISPERSED LEADERSHIP PATTERNS (TRUSTEES, FACULTY, STUDENTS, ADMINISTRATION, OTHERS).
- 7) STANDARDS OF PERFORMANCE PLUS A VARIETY OF WAYS OF MEETING AND PREPARING FOR STANDARDS STRUCTURES THAT FACILITATE 1-7 ABOVE.

Figure 36

In conclusion, these data suggests that we really need to think far more broadly about the mechanisms and techniques that will meet the genuine needs of adults, in addition to those which we can meet so easily by providing extra courses and new forms of degree structures. If there is something to think about in the next five years, it has to do with how we can increase the feeling of quality of life, the feeling of Americans that they are important and worthwhile people. One reason that faith in institutions is declining is that people's faith in themselves is beginning to decline. It would be quite easy to reverse that trend. I would suggest an effort to do so as an agenda item for the next five years.



Virginia Y. Trotter was sworn in as Assistant Secretary for Education in June, 1974, as the first woman to hold that post. She came to Washington from the University of Nebraska, where she served as the vice-chancellor for academic affairs. Dr. Trotter's teaching career began at the University of Utah before she joined the faculty of the University of Nebraska as assistant professor and head of the family economics and management division of the department of home economics. She later became Associate Dean of the College of Agriculture and Home Economics. Dr. Trotter has served on many national and state committees, including the President's Committee on Employment of the Handicapped, Nebraska Governor's Commission for Status of Women, and as president of the Nebraska Home Economics Association and vice-president of American Home Economics Association. She was awarded an honorary degree from Kansas State University and received a Distinguished Service Award from Ohio State University. She is also the recipient of the Melvin McArtor Distinguished Service Award for outstanding contributions to rehabilitation in Nebraska.

Communications Technology: Extending the Reach of Universities to People

**Virginia Y. Trotter
Department of Health, Education, and Welfare**

1975 provides a timely opportunity to examine the progress made in nontraditional learning because now, more than ever before, our society is calling for **educational diversity**. The American people are properly demanding that education become more individualized, more personalized, and more responsive to the needs of a multi-varied student population. At the same time, with costs rising so swiftly, we in education must demonstrate cost-effectiveness in our affairs.

The Second National Conference on Open Learning and Nontraditional Study, with its theme of "Designing Diversity," is an important step in the direction of meeting such demands. I commend the University of Mid-America and the Joint Council on Educational Telecommunications for co-sponsoring this forum, and I am delighted that our own Federal Interagency Committee on Education is also a sponsor.

It seems that one of the tasks of the conference is to measure the progress toward goals set forth by the Commission on Non-Traditional Study in its 1973 report - *Diversity by Design*. May I quote from that report what I feel must be our ultimate goal when we address the issue of nontraditional education. This quotation speaks to the need of finding ways to respond to the uniqueness of the individual student. It says:

If we choose to be elitist in our institutions, we had better say so honestly. If we choose to open doors for new sorts of student populations of all ages, we had better make sure we have workable plans for doing so. The expectations we offer must be clear and attainable; otherwise, the established system of higher education will soon find itself disestablished.

Surely one way of "opening doors for new sorts of student populations" in higher education and responding to their individual needs is through educational technology. It seems to me that it is time now to make a strong affirmative decision that communications technology will be far more than simply an interesting curiosity in higher education - to be wondered at, but not to be relied upon. Employment of technology in education can no longer be thought of in terms of the future. We must think in terms of now.

As Assistant Secretary for Education, I should like to move now - nationally, through whatever influence my office can exert - to establish educational technology as a dependable resource to be used widely and regularly to effect significant and revolutionary improvement in our existing education systems.

Our nation's schools enroll approximately 90 per cent of the population aged 5 to 19. However, there are millions of potential learners who have little or no contact with the schools - the **dropout**, the **handicapped**, the **migrant**, the **unemployed**, and the **elderly**. We must devise ways to give them the knowledge they want and need - for their own professional development, for their personal fulfillment intellectually and emotionally, and for the needs and purposes of this country.

To insure educational diversity, the need for telecommunications and other forms of technology is clearly evident. We must, therefore, put telecommunications to work for education; we must use radio, television, satellites, and everything else that modern technology has given us so we can better satisfy the hunger for learning in this country.

This does not mean that we are advocating the use of technology for its own sake. Whenever we employ telecommunications it should be because it is the **best possible** means we have to deliver a particular educational service. There is one common goal to the use of various kinds of technology, and that is to make varied and appropriate kinds of education available to as many different learners as possible. Technology means **access**, **convenience**, **choice**. It often means offering an education experience to the learner that would otherwise be unavailable.

The media-based open learning system of the University of Mid-America is an excellent example of what I've been talking about. UMA is a test of an alternative **system**. It is far more than a collection of technological innovations. It is particularly exemplary because of the size of the access problem it is trying to solve: because of the audiences it is after, because of the questions of economic self-sufficiency it confronts, and because of the intensive multi-media learning experiences it offers at the local level. Coming from Nebraska, I am very familiar with the success of the SUN project. I am glad to see that the National Institute of Education and the National Council on Educational Research have made a clear commitment for multiple-year funding for UMA.

I strongly believe that the scope of educational technology should be broadened, especially at the post-secondary level. It can cover the whole range from non-credit, through vocational, career, and undergraduate education—on through to post-graduate and professional training. The possibilities are endless.

As for the effectiveness of instructional technology, look at the existing programming at another level. *Sesame Street* and *The Electric Company* have completely re-shaped childhood education. Their success has been unparalleled.

I believe the same phenomena is possible at the post-secondary level. We in the Education Division are also experimenting with the uses of technology as a delivery system in education, especially in nontraditional education. I'd like to briefly tell you about some of our current programs. In my office—that of Assistant Secretary for Education—the Fund for the Improvement of Postsecondary Education is sponsoring a number of projects that use some form of educational technology as a means to improve post-secondary educational opportunities.

Most of you are familiar, I am sure, with the Dayton-Miami Consortium. One interesting aspect of the consortium project is its study of the use of cable-TV as a delivery system to various groups on nontraditional learners. Many of the people who enjoy these programs are homemakers. Many have full-time jobs. Some are continuing an interrupted education—or trying to get a head start on college. Others are changing careers, or simply pursuing new interests. Students are encouraged to supplement their television coursework with workshops and conferences set up by the consortium—a concept called "view and visit." The consortium is in its third year of funding. Among its other services, I think it does an exceptional job by involving the community in media-based nontraditional learning.

Another Fund project—this one at Flathead Valley Community College in Montana—represents an effort to serve the post-secondary educational needs of a large rural community. It does so through the use of cable television. Flathead Community College has extended its boundaries into particularly unique geographical areas. Three separate rural populations comprise the community, and all three are linked to the same cable system. Courses can be taken for credit through the cable-TV delivery system, and students can talk to teachers during the programming on a two-way telephone system.

Flathead Community College hopes to move its programming into even more rural audiences through the use of the cable in the near future.

Self-motivated learners and adults with limited free time are particularly attracted to a Fund project at Grand Valley State College in Michigan. Grand Valley is developing individualized curriculum based on mastering the learning of modules organized around a single topic or concept, using a wide variety of audio-visual materials. Students can establish learning contracts with teachers and go at their own rates in mastering a particular unit of knowledge.

A similar type of media-based nontraditional Fund study is practiced at Winona State College in Minnesota. Interestingly enough, the Winona project contrasts with Nebraska's SUN project in that the college is producing numerous low-cost video tape courses. This low production cost factor makes this program attractive in that courses can be revised and changed more frequently.

Computers and career education are the basis for another Fund project at the University of Illinois, which is developing a comprehensive model of computer-based career and job counseling services for adults. It functions

in this way. If a student had an interest in—say—biology and in human services, he or she could plug that into the computer for information on career options and education that combine those interests. The design phase of this project is about complete. This fall several pilot counseling centers will be established for testing, and we expect that in a year and a half the system will be operating at full capacity.

Probably the most visible project in educational technology that the Education Division has been associated with is the Application Technology Satellite. The ATS-6 was the sixth in NASA's series of Application Technology Satellites. It was launched in May of 1974.

The National Institute of Education has been one of three agencies within HEW to have sponsored projects for the satellite. The NIE projects, which together were called the Education Satellite Communications Demonstration, were designed to determine the feasibility of using a satellite as a way to deliver educational information to and from people in isolated rural areas. Specifically, NIE wants to find out the actual costs involved, what the people in such areas think of information being received sent via satellite, and what subjects and presentations are most effective in this medium.

The areas involved in NIE's projects were Appalachia, the Rocky Mountain region, and Alaska. In Appalachia, over 1200 in-service teachers received training in the areas of career education and reading from the satellite. In the Rocky Mountain region, the target audience was junior high school students. Over 3000 students received, directly from the satellite, information on career education. In Alaska, approximately 1400 children received basic English instruction, and 400 adults received health education.

Though final evaluations are not complete, the response to the satellite has been most enthusiastic. With the evaluation results, NIE hopes to have available information that will help form future plans for using satellites as a means of educational activities. In fact, we might say that we are beginning to understand the "human dimensions" of satellites. As I understand it, at the end of last month, the ATS-6 satellite moved to India.

There are other programs in the Education Division supporting educational technology that may not be as sensational as the satellite, but they do provide the basic "bread and butter" materials in post-secondary education.

The Office of Education has one particular program for the support of technological equipment and materials, the Instructional Equipment Grant Program, which since the passage of the Higher Education Act of 1965 has granted over \$110 million to institutions of higher education to acquire basic equipment and materials to improve the quality of undergraduate education.

The program provides grants for an entire range of equipment, from sewing machines in home economics courses to complex laboratory equipment in oceanography. Applications for grants are recommended to the Office of Education by individual state commissions broadly representative of higher education needs within their state.

In addition to all of these efforts in educational technology, HEW is also sponsoring legislation for noncommercial public broadcasting, the Telecommunication Facilities and Demonstration Act of 1975. Hearings were held earlier this month. We are proposing a five-year extension of the existing Facilities Act, but with a change. Previously, we have not had the authority to fund private colleges and universities. Our bill would make private post-secondary institutions, as well as public, eligible as applicants for broadcast facilities grants. These matching grants would provide the equipment necessary to operate FCC-licensed TV or radio stations.

We also have broadened the concept of the act to include a demonstration authority. The demonstration authority is intended to stimulate interest in applications of technology such as satellites, cable TV, and video discs for the delivery of education, health, and other social services.

The application of these modern technologies is a complex problem and is still in the experimental stage. Although there is great promise with the experiments, individual institutions cannot often bear the full cost of such enterprises. We have, therefore, added the demonstration authority under the new act. Under this authority, UMA, for example, might be a potential user of a satellite system.

Before I close, I would like to take a moment to mention that the Federal Interagency Committee on Education, which I chair, is very concerned with open learning and nontraditional study and has an active Subcommittee on Educational Technology. As I mentioned, FICE is also a co-sponsor of this conference. Their sponsorship reflects not only the Education Division's interest in nontraditional education but also that of many other federal agencies. About 30 are active members of FICE.

As a part of FICE's sponsorship effort, we have requested a paper to summarize the findings of this conference and their implications for federal planning and policy. While the federal government cannot become directly involved in the business of open learning, I do believe it is our responsibility to foster and encourage cooperation among the states, and among nations, in sharing all of our collective resources and expertise toward the goal of making open learning available to people not only in the United States, but throughout the world.

I hope that I have conveyed to you today some of the sense of commitment to nontraditional education—and in particular educational technology—that exists throughout the Administration, and especially in the Education Division. We will continue intensely our search for more effective and cost-effective ways of employing technology in nontraditional learning. We intend to seek support and participation from both the public and the private sector—at the national, state, and local levels—in order to achieve the goal of using technology to the fullest advantage in education.

You do understand that we recognize that our efforts will fail if they do not engage your expertise and enthusiasm. First-rate instructional resources must be made available through technology to every learner. I ask you to join with us in a cooperative effort to achieve this common goal.

Again, may I close by quoting from the report *Diversity by Design*—which so aptly expresses what I am trying to say:

Education to match our needs—as individuals and as a society. This is everyone's goal. We should work toward it enthusiastically, with a sense of commitment, and with confidence that there are good and valid ways to achieve it, ways that do not lessen quality even when they are different from traditional standards. All the resources for learning, wherever they may be found and used, can be helpful in the task; all people of good will, in education or elsewhere, can be partners in an enterprise so fundamental to a democratic nation.

I suggest we become partners in progress as we work ahead for educational quality in a land that has always been one of opportunity.



Congressman James G. O'Hara serves on the House Committee on Education and Labor and is chairman of the Subcommittee on Post-Secondary Education. He is serving his ninth term representing Michigan's 12th District in the U.S. House of Representatives. Throughout his career in the Congress, Mr. O'Hara has been prominent in reform efforts. He was the chief strategist behind the successful fight in the House to provide full funding for federal education programs. Congressman O'Hara is a graduate of the University of Detroit High School, the University of Michigan, and the University of Michigan Law School. He also has an honorary doctor of laws degree from Michigan State University. He was engaged in private law practice before his election to Congress in 1958. Congressman O'Hara has served as a regional whip for the Midwest area, and is considered one of the leading parliamentarians in the House of Representatives.

Congress Looks at Open Learning

**The Hon. James O'Hara
United States House of Representatives**

My subcommittee has concentrated its efforts for the past several months on reviewing the legislation dealing with student financial assistance. We have examined at considerable length the basic educational opportunity grant program, the college work-study program, the various loan programs, and other systems which have been put into place in an effort to meet the financial needs of students. And in the course of that examination, I have developed my own prejudices and predilections into something that might be termed the O'Hara Philosophy of Student Aid. It's not altogether irrelevant to the concerns of this group, so let me outline it briefly.

First, I do not subscribe to the proposition that the student is the only, or even the primary, beneficiary of the educational process. While I cannot contest the proposition that the student is improved—or, at least, is sup-

posed to be improved—by the education he receives, I also believe that the society is improved by the process of educating each of its members. So I believe that education is a proper societal function, and that society has an obligation to make it available as broadly and in as effective a manner as possible.

It follows, from that first premise, that the society should concern itself with removing financial barriers to education to the greatest degree it can. Tuitions should be kept low, and where they cannot be dispensed with wholly there should be financial aid systems designed to help the student over whatever cost barriers remain in place.

I have said on more than one occasion that low tuition is the best form of student assistance yet devised, and the student aid bill that I recently drafted and introduced, and on which my subcommittee has held extensive hearings this year, is frankly and openly designed to encourage the holding down of tuition levels. But it seems to me that the reduction of cost barriers is only one kind of student assistance.

It is at least as important for the student to have assistance in the form of a learning situation which meets his needs as it is for him to have financial assistance to help him past the economic barriers which have been erected in front of the gates of so many institutions of post-secondary education.

Our financial aid² programs, and, indeed, our general programs, at the state as well as at the federal level, are predicated on a series of assumptions which simply do not correspond to the real world out there. The full-time student, once the standard figure in the student population, and still the only figure student financial assistance legislation really takes seriously into account, is becoming a minority in the total post-secondary population, is a minority in the community college population, and may ultimately dwindle to a statistical anomaly in the whole picture.

The rate of change is striking. Between 1972 and 1974, the full-time population grew by 5.8 per cent. The part-time population grew by 39.2 per cent.

But it is not only in the growth of part-time students that the traditional picture of the American student is changing—and changing faster, perhaps, than most of us realize. Is the American college student still an 18 to 21-year-old post-adolescent? According to census bureau figures, 48.8 per cent of the college-going population is between the ages of 18 and 21. But 48.2 per cent is over 21, with a very impressive 10.4 per cent of the student enrollment over 35 years of age.

And this is a growing phenomenon. In 1973-74, the college-going population over the age of 21 increased by 81.1 percent over the previous year. So the change, once again, is precipitate, is massive, and is largely unaccommodated in our national education policy.

It doesn't take a deep analytical sense or a highly developed technical training to perceive that these changes are leading directly and irresistibly toward the precise kind of thing that nontraditional and open learning conference is all about. They are leading to an educational system which is not based on our old assumptions, which is prepared to meet the needs of the part-time student, the mid-career student, the worker in or out of the home, the retiree.

Yet, as clear as this trend is, and as irresistible as it may seem to us, we find that our program and funding devices, federal and state, are simply not prepared to meet these needs.

Last month there was a study published by Richard Meeth of the State University of New York at Buffalo. He examined the impact of state and federal funding mechanisms on non-traditional post-secondary education, and his findings were little short of tragic. To quote from his study:

State and federal funding policies restrain non-traditional programs in a number of ways; but most of the problems with funding formulas and guidelines grow out of the assumptions on which they are based.

Meeth goes on to point out that the state and federal funding systems, for the most part, are based on measuring devices which simply aren't relevant to nontraditional study: the "credit hour," the "full-time equivalent," the limitations on part-time and off-campus study, limitations on state aid going to students who are studying in branch campuses of out-of-state institutions, such as Antioch, and regulations such as those promulgated by the Veterans' Administration which do place a student in a non-resident situation at something of a disadvantage.

Many of these restrictions have stemmed from the general economic crisis through which education is going and in which it may well be stalled for some time to come. Unfortunately, the reaction to a shrinkage of funds available to education has been one of drawing back from commitment to nontraditional study.

But I would suggest that the very fact of the educational economic crisis—energy problems faced by our schools, the growing inadequacy of student aid resources to meet real need, the growing reluctance of students to make the kind of major investments of time and money that traditional education requires—should be the occasion for reinforcing what we are investing in nontraditional study.

The University Without Walls becomes not just an innovation, but a necessity, in a period when the funds to build walls are unavailable. And once we make that adjustment, we may well find that our obsession with walls has always been a waste of resources.

If the skills and the techniques of educational technology can bring the riches of enormous depository libraries to a two-room public library in a remote township hall, if the University of Nebraska can bring the abilities of its best teachers in a one-to-one encounter with isolated farm families via educational satellite telecasting, we may well re-think the nature of the optimum teacher-to-student ratio. Yes, the need to make do with less in the way of capital investment and outlay, combined with the existing changes in the shape of the student body, may be two mutually reinforcing factors which will bring about fundamental structural change in our post-secondary education system far more rapidly than we would have imagined a few short years ago.

We must begin to get ready for those changes before they overwhelm us. Our education legislation at the federal level, like our education institutions at all levels, is not designed to serve the student population of the next decade, or to provide the educational content that the students of that decade and the rest of the century are going to demand.

The new student, like the new consumer of every other kind of goods and services, is going to demand that educational services be packaged and distributed to serve his needs, not the needs of the packager or the purveyor, and I think our public policy should equip that consumer to see that his needs are paramount. His needs involve the ability to get an education on his own terms, at his own time, in bits and pieces tailored to his schedule.

It seems to me that in this country, if we have a citizen who wants to learn more about his society, about his history, about his civilization, we say: "Well, yes, we could teach you if you are willing to pay, and if you are willing to conform your schedule to ours. Yes, we can teach you, but are you really sure you want us to?"

It seems to me that we ought to be saying to them, "If you want to learn something, wonderful. How can we help? What can we do to make it possible for you to do so? How can we assist you, encourage you? How can we serve you?"

And this is the area where you hold the key. Will we really try to turn every living room into a classroom? If we do, you must show us how to do it.

Are we going to try to turn every neighborhood library into the scene of a seminar? Are we going to let each and every one of our citizens, as a matter of right, have free and untrammeled access to the intellectual wealth of which we are the temporary custodians? You must show us how to do that without letting this access be frustrated for the senior citizen or the mid-career accountant or the youthful homemaker or the isolated farmer—frustrated by cost, frustrated by the distance to a classroom, frustrated by the tradition of the cookie-cutter curriculum.

If the nontraditional student is to be adequately served—if the post-secondary education of the future is to be focused on the student, rather than on the institutions which are there now, and which are serving him reasonably well now—then you and your associates must work now to see that non-traditional education and its techniques and concepts continue to remain alive and provide the seed bed for the education system of the years just ahead. You must fight now to maintain the public's options for the years ahead—the years when the prospect of full access for every American to as much education as he wants and can benefit from can be a reality—with or without the kind of institutional base we now think it requires.

In closing, I shall remind you again that your job, like the job of everyone else in the educational system, is to make a reality of the promise so eloquently described by Thomas Wolfe:

So then, to every man his chance—to every man, regardless of his birth, his shining golden opportunity—to every man the right to live, to work, to be himself, and to become whatever thing his manhood and his vision can combine to make him. This seeker, is the promise of America.



Durward B. Varner is president of the University of Nebraska. Under his leadership at Nebraska, the State University of Nebraska (SUN) open learning project was conceived and funded. From the SUN project grew the four-state open learning consortium, the University of Mid-America where Mr. Varner also serves as president. He came to Nebraska from Michigan, where he served as chancellor of Oakland University in Rochester and vice-president of Michigan State. Mr. Varner is a member of many national and international agencies and commissions, including the Joint Committee on U.S.-Japan Cultural and Educational Cooperation and the Study on Continuing Education and the Future. He is a member of the executive committee of the National Association of State Universities and Land-Grant Colleges and was chairman of the Council of Presidents for that association. An alumnus of Texas A & M, Varner earned his advanced degree from the University of Chicago. He has since been awarded five honorary degrees and was recognized by Texas A & M with its Distinguished Alumnus Award in 1972.

An American Perspective on Open Learning and Nontraditional Study

D. B. Varner
University of Mid-America

I welcome the opportunity to comment on a subject of considerable national importance, one in which I have a great deal of personal interest. I have been intrigued with The Open University, the University Without Walls, Empire State College, and certainly with our own nontraditional enterprise, the University of Mid-America. I am intrigued with the enormous potential in this approach, yet I am sobered by the realities of the hazards ahead.

When we talk about an American perspective on open learning, I have found it necessary to remind myself—as I now remind you—that the concept is far from new in these United States. Admittedly there are some new dimensions, and I shall refer to these later, but the concept of open learning—of ac-

cess—has a long history in America. The Morrill Act of 1862, which created the land-grant system of America, carried some impressive words:

Section 4 (Amended)...established grants of land to provide for the endowment, support, and maintenance of at least one college in each state where the leading object shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the Legislatures of the States may respectively prescribe in order to promote the liberal and practical education of the industrial classes in several pursuits and professions in life.

Notice that Sen. Justin Morrill did not confine his target population to the young, the mobile, the financially affluent. He spoke of the "industrial classes," and he spoke of the liberal and the practical education of these industrial classes.

I would not be surprised to learn that Senator Morrill drew guidance from the Northwest Charter which had formulated a statement that found its way into many of the state constitutions of this country. I find it in essentially the same form in the Michigan Constitution, in the Nebraska Constitution, and in several others across the country. The Northwest Charter made the grand declaration: "Religion, morality, and knowledge...being essential to good government, it shall be the duty of the Legislature to pass suitable laws to...encourage schools and the means of instruction." It is noteworthy that these early pioneers did not restrict their concept of learning. They talked of the "means of instruction." I can easily convince myself that even then there was a belief that education should properly be useful to all the people.

I have been further intrigued by the charter created by the Nebraska Legislature in 1869, spelling out the mission of the University of Nebraska. It said very simply: "The object of such institution shall be to afford to the inhabitants of this State the means of acquiring a thorough knowledge of the various branches of literature, science and arts."

Again, no reference was made to education for the young, nor did the charter refer to the processes to be used. It said that education should be made available to the inhabitants, without restriction on age or place or time.

Certainly, I would not suggest to you that these founding fathers had in mind the precise model of The Open University or the University Without Walls or the University of Mid-America, but I do find it intriguing that they gave a broad charter—a broad license—to education. The constraints have been imposed by persons of less vision, less imagination, less courage in the years that followed:

As a product of the land-grant university system, and as a person who has spent all of my professional life in the land-grant system, I must confess that I do not come to the subject of open learning with the zeal of a new convert. I come with great enthusiasm, but it has grown from years of involvement, with trying to make this concept come to life. Let me admit that I draw renewed vigor and inspiration, as well as insight, from the studies of Frank Newman and Sam Gould and their associates. They have made eloquent and persuasive pleas for the cause of access in higher education, and I applaud and support their conclusions and recommendations.

While I caution against any notion that we are actually involved in radical or revolutionary educational ideas, I would, at the same time, readily and cheerfully admit to some new dimensions. For one thing, there is a new national mood, an urgency, which is strongly supportive of vigorous and creative efforts in the field of nontraditional studies. Beginning in the late 1960's and early 1970's, it became apparent that our nation was demanding fresh

approaches to the business of learning. Part of this demand undoubtedly grew from the frustrations of the 60's on the college campuses; part of it grew from a concern about the soaring costs of higher education; and a sizable part of this new concern emerged because of the realization that our complex society demanded an educational approach that was geared to lifelong involvement.

This national mood called for creativity, for innovation, for breakthroughs in education. This mood demanded greater access to the resources of the learning community. This mood was concerned with costs. All this must be categorized as new and enormously significant to those of us involved in post-high school education. It was a plea which could not be ignored, and this very conference represents a part of the response.

A second new dimension to nontraditional education is in the area of the application of technology. Historically we have relied on the printed word and the personal contact as the educational agents. The Agricultural Extension Service, one of the true pioneers in the field of nontraditional education, used the county agent, the extension bulletin, and the town hall meeting as means of extending education. Correspondence courses, extension conferences, and off-campus courses represented the major components in the historical presentation of the general extension programs.

Suddenly, there has been a realization that the printed word could be significantly reinforced through the use of TV, audio tapes, video tapes, even the newspaper. Perhaps more significant is the fact that these several components could be used in combination—a built-in redundancy, as we call it in the University of Mid-America—to reinforce the entire learning experience. New technology continues to emerge, and it is my private guess that some of these new developments will prove extraordinarily effective in making open learning more successful. While the computer is not new to the field of learning, some of the applications now being developed are new, and with the phenomenal capabilities of the digital computer, I forecast that this will emerge as a new and effective ally of the open learning systems. Even more significant, in my opinion, is the potential of the video disc. If current reports are accurate, there is a likelihood that within 24 months we will see on the market video discs and the necessary equipment at a cost that will soon permit many, if not most, of the homes in America to take advantage of this new device. This could be a dramatic technological breakthrough for open learning. Let us pray for the compatibility and the cost reductions that are promised.

What I have tried to say is that nontraditional education is not a new concept in this country. It has been with us for a long time, and has enjoyed a considerable amount of success. Yet there is something new, something exciting, something significant, something urgent about the whole process, and that is why we are assembled in this conference today.

I have been involved in the administration of public higher education for almost 25 years. Out of this experience one learns to be both philosophical and pragmatic. I have a growing suspicion that in the course of this conference we are involved in a good deal of philosophy, and for that reason I have elected to address my remaining comments to the pragmatic side, to some of the "nuts and bolts" of open learning in America as I view it in 1975. It is a view growing out of a career in the land-grant system, reinforced by four rather intensive years in the development of SUN and UMA.

First, let me share my convictions about the potential as I see it—growing out of my own background and involvement. For purposes of simplicity and clarity, I shall consolidate into three broad areas or categories the promise of open learning as I believe it to be.

At the top of this list is access. This is the heart of the concept. If we can develop this concept as I believe we can, then we shall at last be able to remove the barriers to educational opportunity for essentially all of our people. We shall be able, through television, audio tapes, video discs, the computer terminal, the newspaper, the textbook, and the study guide, to make higher education available to all the people of this country on their own terms. They may continue to work or travel or manage their households and yet learn in an orderly and systematic fashion. We can move down into the secondary education and provide an opportunity for young people to get a head start on post-secondary education while still in high school. If we do it well, if we take advantage of the technology that is now ours, if we are bold and aggressive and imaginative, then we may very well make a prophet of Peter Drucker when he forecast that ours would be known as "The Learning Society."

A second promise of this concept is that it is possible to assure quality in the development of these courses and these programs. I am convinced now, based on experience, that there need never be valid criticism of the quality of these kinds of non-residential course offerings. When the ideas of Henry Steele Commager can be incorporated into a course dealing with the cultural history of the Great Plains of America, when the experience and expertise of former Ambassador Edwin Reischauer can be directed to a course in Japanese studies, when the wisdom and experience of John Hannah can be incorporated into a course on the world food problems (as we are doing in course development at UMA), then we need never be apologetic about quality. It is now clear to me that extraordinary intellectual quality can be incorporated, that technical quality can be achieved through the processes and procedures being developed, and that the students, if we do our job well, will have access to the best minds in this nation or this world and may enjoy the benefits of the best of modern technology applied to the business of teaching and learning.

The third area of promise, and one which I, as an economist, find very tantalizing, is our ability to achieve economies of scale through nontraditional education. All of us have been agonizingly aware of the plain fact that traditional education is increasingly costly because of the constraints imposed by the student-teacher ratio. It has been a hand-crafted industry. As with symphony orchestras, it has been extremely difficult for universities to respond to the call for improved productivity. Yet the calls continue to emanate from legislative halls all across the land. The open learning concept, as I perceive it, at last makes it possible to develop quality programs and courses that can be utilized by hundreds of thousands of students, and in the process achieve what may be a significant breakthrough on the economic side of the educational enterprise.

I have been cautioned by some of my colleagues lest I unduly emphasize courseware and production and dollars and the things side of open learning. Their point is well made, and I should underscore the fact that open learning is, indeed, a process more than a product, that it has many dimensions, and that the student is the ultimate point of concern. All this I know full well. But to get from here to there requires a very considerable concern with technique and technology.

All this is pleasant to contemplate, but let me run up the caution flags. It will not be simple, nor will it always be comfortable. There are some very substantial problems.

I have identified quality as one of the great promises of nontraditional studies. Yet, high on the list of concerns I have about open learning is the current uneven quality of the programs now available. Quality is possible—not guaranteed. This has always plagued education in its efforts to serve its

students, whether traditional or nontraditional. This lack of uniformity in quality may be just as great in a residential setting, but I can assure you that any shortcomings will be more visible in the context of nontraditional learning or open studies. The critics are standing ready: sharpshooters that may draw in heavy artillery. Good quality is imperative, but to achieve good quality requires sizable investments of talent and time and money. Yet, I must underscore the fact that if this grand scheme is to succeed, quality is no place for compromise.

Closely related to my concern for quality is my concern for credibility. The "gate-keepers" in education—and all of us must to some extent be included in this category—do and will cast a critical eye on any such new form of learning. Credibility in the academic profession is essential to the long-run success of what we are about. This means involvement, patience, review, and a set of standards higher than we have normally used. Even so, the achievement of credibility is an imperative of the day, and it is attainable.

Related to both these areas of concern—quality and credibility—is a third. Some of my staff refer to this as the "not developed here" syndrome. It will be no news to any of you that a traditional campus attitude is that if a course is developed somewhere else, it probably is not suitable for use on that campus. It is this syndrome which leads to widespread criticism and even cynicism about educational materials which have been conceived and produced in another setting. While I obviously do not subscribe to this point of view, it is, nevertheless, real, and it must be listed among the hazards which we face as we move into an expanded program in open learning.

A fourth hazard is comprised of the very substantial costs involved. Front-end money is a term which has become increasingly appropriate in the development of educational materials for nontraditional use. Few of the state legislatures are in a mood to fund new educational enterprises. Private foundations have their obvious fiscal limitations. The federal government has not yet made a clear commitment to this venture, although the National Institute of Education (NIE) in particular is making a serious effort to be helpful. Yet, quality is expensive, and particularly so as the technology available is employed. (It costs from \$100,000 to \$2 million per three credit course.) The great and continuing need which all of us face in this area is the need for start-up capital, for front-end money.

A final area of concern is that of accreditation, of some uniform basis for establishing acceptable standards for nontraditional studies in America. Most accrediting agencies have recognized the need, and have acknowledged the problem. Yet the real test is ahead of us. We very much need to establish some kind of uniform national accreditation or evaluation mechanism so there can be some degree of acceptability, uniformity, and credibility. This will come. But it must be addressed soon, and with vigor.

By way of putting into an American perspective the subject of open learning, I have tried to remind us all that in our complex and far-flung system of post secondary education, the concept is not new. It has been with us for a long time. What is new is the environment of our times. There seems to be a sense of urgency, a conviction that old forms, old processes, old institutions, however effective they have been, will no longer be adequate to serve our needs. Congressman James O'Hara's report on the dramatic increase in part-time enrollments—on the fact that there is almost a 50-50 per cent division of those above and those below age 22 now enrolled in our colleges, and that more than 10 per cent of our formally enrolled college population is over age 35—brings to our attention the benchmarks of change which simply cannot be ignored.

What is also new is the thrust in the technological area. It now appears that education and society are saying "Okay, we now accept the fact that technological innovation can no longer be denied; it is an essential ingredient in learning." And it is essential! I see no way for us, realistically, to ignore any longer the enormous possibilities which technology offers us. And this is a part of the new national mood, too.

In speaking to this perspective, I have identified the promise and the problems we face. To be sure there are obstacles, but the potential is so great for reaching the hitherto unserved—for achieving a uniformly high quality, for achieving an economic breakthrough—that we may well be on the threshold of the most significant educational development of this century. I believe this to be within our grasp.

Yet, in order for us to proceed from where we find ourselves today to the full realization of this potential, some major steps need to be taken. There is an urgent need for an open-learning clearinghouse or council. In order that the progress of these past five years is not nullified, the achievements not atomized and lost, the momentum not permitted to wither away in frustration, there needs to be established an organization concerned exclusively with nurturing the idea to its full potential. It may be the reinvigorating of Sam Gould's commission, or a new body of cooperating institutions, or an NIE-sponsored body. There are many forms it could take, but the key conclusion I reach now is that it is crucial that it happen. Such an organization is needed to speak to quality and standards, to accreditation, and to federal agencies and bureaus. It is needed to serve as a device for distribution and utilization of high-quality and high-cost course materials.

Finally, I turn to an even-higher order of concern, if we are to address seriously an American perspective on open learning.

What is the national commitment—in 1975—to open learning?

Admittedly, the NIE has taken a commendable leadership role, and for that we are grateful. But the entire budget for all the programs of NIE is only \$70 million, and the prospects for budgetary growth are not bright, at least in the short run. Is it important for the well-being of the nation that our citizens—old and young alike—have the opportunity to learn, to develop their full potential, as citizens, as parents, as workers, as participants in a democratic society? The answer must be in the affirmative: there is no alternative. But where is the commitment?

I submit to you that if President Gerald Ford is serious—and I am convinced he is—about somehow joining labor and education more effectively, as he stated in an address at Ohio State University shortly after his appointment, then there is no more suitable instrument than that of open learning. That is precisely what it's all about!

If Congressman James O'Hara, the leading spokesman for education in the Congress, is serious in his statements—and I believe he is—then we stand ready to respond.

If Assistant Secretary Virginia Trotter, the Administration's top representative for education, is serious—and I believe she is—then the means of achievement are here.

I submit to you that if education is important to the full development of this nation's potential, then it is a matter of some urgency that action be taken, and taken now, to make it possible for programs—courseware—to be developed and delivered, and at a cost to the learner which is not prohibitive. Specifically, we need a realistic and meaningful system of financial aid for the nontraditional student: the retiree, the factory worker, the socially and

economically disadvantaged, the high school student. Congressman O'Hara gave us hope, but he obviously needs help in achieving that goal.

Finally, I submit to you that it would be highly appropriate for the President of these United States to establish a national commission or task force to address the subject of open learning in America. This task force could take as its basic document the Carnegie Commission report, "Diversity by Design," and examine each of the 58 recommendations with an eye to their immediate implementation. Such a task force, in my judgment, should be composed of nontraditional learners, educators with a willingness to address this task in this form, labor leaders, businessmen, farmers, housewives, a cross-section of producers and consumers. This task force obviously should draw on the brief but rich experience of The Open University, and it would be my hope that ultimately a program of course material exchange could be developed between at least these two countries.

I call for this action at the national level because it is clear to me that the full realization of the promise of open learning cannot be achieved if left to a state-by-state development. The necessary start-up capital will not be available from any state legislature. The result of inadequate funding will be courseware of questionable quality. The result of questionable quality courseware will be the demise of the concept. It's that simple. The best that can be expected of state funding is to provide funding for the delivery mechanism. Further, it is essential, if the economies of scale are to be realized, that courseware be utilized by a large student clientele, and this simply cannot be achieved except on a regional or national basis.

For these reasons, I am persuaded that we now need a Presidential task force to provide the springboard for moving this concept to its full realization, and that time is important.

Ladies and gentlemen,

— We are on the threshold of a development in higher education which has the potential in 1975 that the Morrill Act, which established the land-grant colleges, had in 1862.

— We now know that we can make education available to all American citizens, on their own terms.

— We now know that we can achieve a quality level in courseware development in most areas that will compare very favorably with existing residential course material.

— We now know that we can achieve those elusive economies of scale in education through the utilization of the advanced technology now available to us.

We know these things. What we need now is leadership on the national level, in the White House and in the Congress. What we need now is a commitment on the part of our government to the ideal of equal opportunity in education, a commitment at long last to the full implementation of the inspiring words of the Morrill Act of 1862: "...in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life."

I suggest that it's time for bold action. We're already 113 years behind schedule.



Samuel Baskin is president of the Union for Experimenting Colleges and Universities and is also the director of the University Without Walls Program. He is currently on leave from Antioch College in Ohio, where he has served as director of the Office of Educational Planning and Program Development and professor of psychology. His previous teaching positions were at Stephens College in Columbia, Missouri, and at New York University. Dr. Baskin is a member of the Commission on the Reform of Secondary Education, supported by the Kettering Foundation and of the Commission on Undergraduate Education and the Education of Teachers at the University of Nebraska. He serves on the board of directors of the New Jersey Education Consortium and is a member of the Advisory Committee for Minicourse Development Project at Purdue University. Dr. Baskin is a member of the Association for Higher Education, the American Psychological Association, American Personnel and Guidance Association, National Institutional Research Forum, and the American Educational Research Association.

Open Learning in American Higher Education: Some Perspectives, Some Concerns and Issues Ahead

**Dr. Samuel Baskin and Dr. King V. Cheek
Union for Experimenting Colleges and Universities**

During the last 10 years, the American higher education community has developed a significant number of open learning/nontraditional programs designed to provide new options and new ways to learn to persons whose learning needs were not being met by the nation's campus-based system of higher education. These programs developed in response to a number of factors:

- Many clientele—older persons, minorities who had for too long been disenfranchised by our society, women bound-in in their home and family situations, workers bound-in in their job situations, persons living in geographical locations too distant from a college or university, and many others who cherished the

dream of advancement and a better life through a college education—found that they could not achieve that dream through conventional programs of education, which either denied them access or made it impossible either for them to attend or, if they could attend, to survive.

—Rapid advances in technology and new views on how knowledge might be organized to keep pace with a rapidly-changing society pressed colleges and universities to think anew about the nature and content of a college education and the kinds of delivery systems that might best achieve it.

—The financial plight of colleges had grown increasingly serious and was forcing colleges and universities to seek new ways of organizing higher education, of locating and defining new kinds of faculties, and of using new and other resources for teaching and learning—and to do so without sacrifice to educational quality. (A current Carnegie Foundation report predicts that one out of every 10 private colleges will be out of business by 1980 or sooner.)

—Students—at least those that were around in the mid- and late-60's—were expressing increasing dissatisfaction with the nature of the teacher-student learning relationship, and were letting American educators know that they felt they, too, should have a role in decision-making processes about higher education, particularly with regard to the kinds of initiatives they might be permitted to take in the design and implementation of their own education. As one of my students would often put it, "How can you expect students to develop habits and ways of learning independently if higher education constantly denies them the opportunities and experiences necessary for learning on one's own?"

—Last, but not least, many societal problems were forcing colleges and universities to ask themselves what a higher education really ought to be like anyway: who should it serve, who might be its teachers, what might be taught, and how might it best be taught?

The alternative education/open learning/external-degree/University Without Walls-types of programs that have been developed in response to these needs have been, and rightly so, of many sorts. And while they all address themselves in their own ways to particular clientele in particular situations with particular needs, it is a mistake for us to talk about open learning programs in American education as if they were all of the same order, came out of the same philosophical and educational base, were built on the same organizing concepts, and made use of the same delivery systems.

Alternative education/open learning (to which I shall refer as alternative education, for simplicity's sake) can be grouped around three major categories:

1. Programs that might be classified under a **certification-of-achievement** label, in which student achievement and the awarding of a degree are determined on the basis of the student's ability to demonstrate mastery of certain subject matter materials. He or she may demonstrate this mastery through the successful completion of college-level examinations offered by the certifying institution itself, through CLEP examinations, or through other tests offered by the examination board and other groups. In a number

of instances, students may also be certified for credit toward the degree upon demonstration of successful completion of courses taken elsewhere.

In these programs, students progress toward the degree at their own rate by accumulating credits through suitable examinations. On one hand, these programs can be described as traditional, in that the knowledge or subject matter to be learned and the evaluative procedures to be employed are standard in nature, and are defined for the student. On the other hand, these certifying institutions can be defined as totally nontraditional in that these alternative-education institutions have no teaching faculty of their own, provide no instruction, and allow students complete freedom in preparing for examinations by whatever means they have at their disposal. The New York State External Regents Degree Program and Edison College of New Jersey are good examples of this mode of alternative education.

2. A second category of programs, which might be classified as being primarily **media and/or technology-centered** in their mode of operation, have as their major focus alternatives modes of delivering knowledge to students outside the classroom. Emphasis is given in these programs to the use of modern media of communication, particularly, but not exclusively, television, with these media often supplemented by home-study manuals, transcripts of lecture materials, good, plain old books—sometimes we forget that they still represent our most significant source for independent study—and other print and non-print materials. Some of these programs also make use of Learning Centers, where students can meet with a resource person and secure special tutorial help, see a replay of a televised lecture, and dialogue with other students.

The major characteristic of these media-centered programs is that they can reach large numbers of students in many different and distant places, including their homes, offer an opportunity for close-up lectures by highly gifted persons with whom most students would not normally have any contact, and, in a number of instances, provide the opportunity to undertake course of study without having to physically come to a campus. Unlike the Edison and New York State Regents degree programs, however, these media-centered programs operate for the most part on a fixed delivery schedule in that students can only receive their TV and radio lessons at the time of their scheduled broadcasts. This means that in this kind of alternative education system, students in most instances must pace their learning in relation to the time-cycle and places of delivery around which these learning programs have been sequenced for the student.

As in the programs previously described, the curriculum to be learned and the evaluative procedures to be employed are usually defined for the student. The Open University in the United Kingdom, the University of Mid-America, and Chicago's TV College, while not all alike in all dimensions, are illustrative of the kinds of programs that can be grouped under this category.

3. A third general category of alternative education programs might be described as being primarily **learner-participative** and **experientially oriented** in nature. These programs often stress individualized programs of learning, with student and mentor seeking to design together the nature of the learning program to be undertaken, including various strategies of learning—classrooms, work experience, internships, technological aids, learning-contracts, travel, self-directed study, and research—that might be employed in the achievement of the student's learning goals.

Many of these programs have developed evaluative procedures designed to allow educational credit for learning from previous job experience, and

many seek to involve the student himself in the determination of evaluative procedures to be employed. Age groups addressed in these programs, as is the case with most of the programs described earlier, may range from 16 or younger to age 70 or more. The distinctive aspect of these programs is found in their more individualized approach to student learning, the attempt at greater involvement of students in the design and evaluation of their own education, the use of a broad array of field resources for teaching and learning, the introduction of new evaluation procedures, and the stress on dialogue as a vital element in the learning process. The Union for Experimenting Colleges and Universities' University Without Walls program, Empire State College and Minnesota Metropolitan College, again while not all alike, are illustrative of this category of programs.

Issues, Concerns, and Warning Signs

While American programs of alternative higher education have taken a number of different turns, and while much progress has been made, there remain a number of concerns, issues, and warning signs which require continuing attention, if these programs are to continue to gain in their strength, to grow, to gain in their viability and credibility, and—in some instances—to even stay alive.

For one thing, as the number and kinds of open learning/nontraditional programs increase, it becomes important that nontraditional educators avoid moving into a rigidity of their own which suggests that their option is the only option that makes sense for all. People do indeed learn in a variety of ways and from a variety of vantage points, and it is important that we remind ourselves, from time to time, that while all wisdom may not rest in our conventional programs of education, neither does all wisdom rest in our programs of open learning. There is much open learning programs can learn from one another, and from conventional higher education itself, and it would be a mistake for any of us to think that we have arrived with a formula that represents a *sine qua non* for all higher education.

For another, programs of open education must exercise care that their basic motivations in planning, organizing, and delivering an educational program continue to be educational rather than financial. This is not to say, that educators need not give continued attention to the further exploration of educational models that provide quality education at less cost. It is to say, however, that while the pursuit of the dollar alone is very tempting in these times of severe economic stress, it will obscure, if not destroy, all that we have achieved thus far.

Third, programs of nontraditional education must continue to give rigorous but sensitive attention to the problems of quality control. Like it or not, the nature of the beast is such that nontraditional institutions will continue to be called upon to demonstrate that they are, in fact, offering students a legitimate and bona fide education, despite the fact that the same demands and same tests of legitimacy are not being made of our more conventional education programs. The dangers as we seek to address ourselves to this concern are two-fold, and they come from opposite ends of the scale: (1) that we get so rigid in our evaluative procedures that we lose sight of, and fail to concern ourselves with, the very objectives nontraditional programs seek to achieve—as, for example, the development of student independence in learning—or (2) that we rationalize away the use of quality controls of any sort on the argument that we cannot really measure what the student has learned or how he has grown because his experience has been of a very personalized nature.

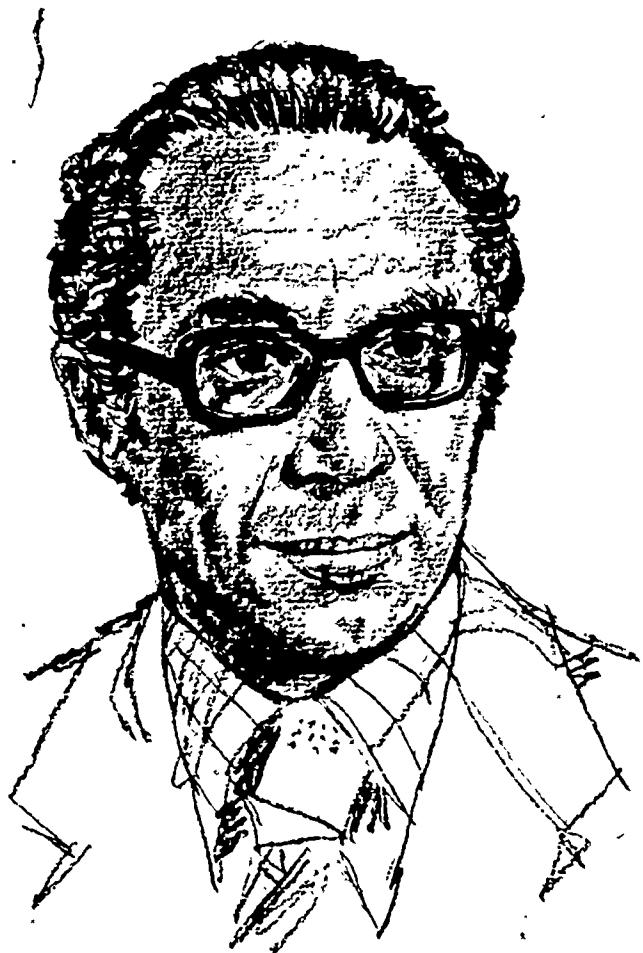
A fourth concern deals with the responsibility of nontraditional education to continually address itself, in both the form and content of the programs being shaped, to the problems of access for previously neglected clientele. Nontraditional education must not become another way of closing out from higher education those who have already been closed out for much too long, as it could be, if we fall back into established views of what constitutes academic knowledge. The forms and models of nontraditional education developed and being developed must allow room for the educational needs and learning styles of these disenfranchised students. Our programs of nontraditional education must recognize the knowledge, values, and cultural contexts that these disenfranchised students bring with them. They must provide approaches to learning that are sensitive to the cultural context of these groups, approaches in which educators would seek to address themselves to the needs and aspirations of these persons, as they in turn seek to define the nature and meaning of a higher education for themselves.

Fifth, nontraditional educators had better remind themselves that the days of the 60's—of the student protest movement and the forces that made for educational innovation—are over. Despite the developments in open learning, the tide today is swinging back toward the classroom door, and toward more secure, conventional ways of doing educational business. Much has been accomplished in the development of new modes of learning, and in finding ways of providing educational reach for those who, heretofore, have not been served. But the backlash may also be coming, and nontraditional educators had better be reminded that the struggle is not yet over.

Sixth, there are some ominous signs in some recent public policy actions that tell us that nontraditional education has not yet really come of age, and that much work needs to be done in better defining, particularly for governmental agencies, what open learning is all about, and what it seeks to achieve. Witness, for example, recent governmental regulations which effectively limit veterans' financial benefits primarily to those persons enrolled in regular classrooms and following regular course schedules.

It is one thing to concern oneself—as public agencies must—with fraudulent practices and the prevention of fraud. It is quite another thing for a public agency to declare that quality education takes place only within a classroom, around certain hourly schedules, and over a certain number of class-hour weeks. The trend is a serious one, and those here who believe in open education must give serious attention to ways by which this trend can be countered. For what a pity it would be if we found ourselves finally winning the struggle with the nay-sayers in our own higher educational establishment, only to find that we were wiped out in one fell swoop by legislative bodies that were insensitive to what we were all about to begin with, and that defined for us what a higher education ought to be.

I know that many of us have our visions of what higher education ought to be about. In closing, I might say that I regret very much that our delivery systems are still such that the only way we seem to have of being able to talk to each other in large groups such as this is for someone to make a speech. My real preference today would have been to be able to dialogue with you on the theme: "University Without Walls: A Love Story!" Perhaps we will find a way of doing that, come 1980—or sooner.



Abdol-Rahim Ahmadi is currently the chancellor of the Free University of Iran. In this capacity, he provides the leadership for one of the newest and most ambitious efforts outside the United States to establish an open learning system. Prior to his appointment as chancellor, Dr. Ahmadi was deputy director for the Institute for Research and Planning in Science and Education. He has also served as deputy director for research affairs of the Iran Statistical Center, the director of the Iran National Tourist Organization, and editor for *Economic Research* magazine at the University of Tehran. Dr. Ahmadi has his Ph.D. in economic sciences from Tehran University, but has also studied at George Washington University and the Bureau of the Census in the United States, and at the French Language College and IRFED in Paris. He was a member of the Iranian delegation to the 1970 and 1972 sessions of the UNESCO General Conference and led the Iranian delegation to the 32nd Conference of International Education Bureau in 1970. He is a member of the National Committee for World Literacy Campaign, the Central Council of Universities and Higher Educational Institutions, and the Council for Expansion of Higher Education.

An International Perspective on Open Learning and Nontraditional Study

Abdol-Rahim Ahmadi
Free University of Iran

I would like to extend my thanks to the organizers of this second conference on open learning systems, for giving me the opportunity to describe the contribution the Free University of Iran (FUI) is hoping to make to open learning systems and nontraditional studies.

The Free University aims to introduce and to institutionalize new concepts in higher education. The University, which will receive its first intake of students in early 1977, will be very different from existing universities with respect to its objectives, students, educational programs, teaching system, and mode of operation.

The innovations and complexities of the educational system require a lengthy period for detailed planning, course design, and development of the required systems before students can be enrolled. This phase was begun in December, 1973.

I would like to discuss the aims and objectives of the FUI.

Iran's rapid rate of economic and industrial expansion with its accompanying increase in career opportunities has forced our institutions of higher education to step up the training of skilled manpower to meet these increasing demands. The existing universities have been, and are currently unable to answer this call, mainly due to the shortage of faculty members and the high costs of traditional education.

It is the goal of the Free University to train these badly needed specialists and produce active professional men and women whose skills, knowledge, and attitudes will enable them to contribute effectively to the welfare of their society.

Moreover, the increased demand for new ~~skills~~ brought about by this rapid economic growth makes it imperative that lifelong educational opportunities be available to those who normally cannot attend conventional universities. This is the second goal of the Free University: to provide for retraining of individuals and to upgrade and improve individual knowledge and skills through the use of nontraditional educational methods.

There also exists a need for upgrading the general public's awareness of their culture, environment, and the problems of their society. This is the third goal of the Free University: to provide the opportunities for non-formal, general education.

In pursuance of the objectives which I briefly described, the Free University is developing a very nontraditional teaching system: that of teaching-at-a-distance.

To be sure, the idea of teaching at a distance is by no means unique. Correspondence, radio, and TV schools have long been in existence throughout the western countries. Use of multimedia in an integrated form has been introduced by the Open University. What makes the FUI system different is that it is attempting to utilize the same approach taking into account all the different socio-cultural elements and physical constraints which exist in Iran, and at the same time attempting to meet the specific demands of Iran's changing society which our other educational institutions are unable to do.

Taking these elements into consideration, a new and in itself unique university is being created.

In the early planning stages of the Free University we attempted to design our programs in areas where our graduates would meet the most critical needs of the nation. The results of initial studies pointed to three critical areas, on the basis of which the following four-year programs were generated.

The extreme shortage of qualified teachers at elementary and secondary school levels has led us to give first priority to a teacher education program. We are putting a great deal of emphasis on the quality of this program because our graduates could have a profound effect in reshaping the structure of their society as well as their whole educational system.

Our teacher education program is designed to provide a thorough integration of theoretical foundations and practical experiences. These foundations will include a variety of instructional models as well as the means for diagnosing student characteristics and instructional needs. The practical experiences will begin early in the program, an improvement over typical teacher education programs, and will be arranged to gradually increase the amount of instructional responsibility upon the student teacher. This will provide the student with a smooth transition from the program to the reality of the classroom.

The problem of providing full coverage of health and medical services in every part of the country has in recent years attracted the attention of various organizations in Iran. It is apparent that the output of medical schools cannot be increased to meet our needs in the health services field. The process of educating and training a physician is time-consuming and expensive. A tentative solution which has been proposed is to train a number of specialists, each with varying amounts of medical expertise. The spectrum of health specialists ranges from an eighth grader with a few months of training to a specialist physician. With this type of arrangement it is possible to provide, through a national network, all the health, medical, and disease prevention services needed. If such a system is successful the retarding effects of poor health and inadequate health services on the economic expansion of the nation will be eliminated. With this solution the problem of keeping physicians in small towns and villages where they feel overqualified for performing certain tasks and thus become disenchanted will also be solved.

Needless to say, at the present time almost half of the total number of our physicians live in Tehran, and the distribution of medical care facilities throughout the country is unbalanced. The implementation of a national network will help to redistribute the services properly and the success of the future graduates of the Free University will be dependent upon the success of the national network.

The Free University of Iran, by creating a four-year, post-secondary program in health sciences, will contribute in a significant manner to the setting up of a national health and medical care network.

The components of the health sciences program will be designed by taking into account the particular needs of the country. For example, attention will be given to preventive medicine in addition to clinical and diagnostic medicine, which are normally being emphasized in traditional programs.

The third program of the Free University, that is, the rural development program, probably will be the most original and innovative one. Curriculum will be designed on the basis of actual problems encountered in the development of rural areas and by identifying the pitfalls which tend to retard the desired progress and development. The problems of rural development in Iran are unique and their solution requires a unique program.

The program will be multi-disciplinary because in this area one can no longer separate the problems of production and supply, productivity and organization of labor force, health services, environmental protection, and education. A satisfactory solution in these areas requires a full understanding of the interdependence of all the factors involved.

Another innovative aspect of the FUI is our information delivery system. In the traditional classroom, the teacher is the primary delivery system. Since the FUI will have no teachers in the traditional sense, our system for disseminating information is quite nontraditional. It will be administered on three levels: central, regional, and local.

Central headquarters may be described as a command center for operations. The preparation of educational packages and all the related activities are carried out at the central headquarters. Regional centers will serve a double role. In addition to administering and supervising local center activities which include back-up and maintenance services, the regional center will provide certain educational opportunities not available at local centers. These opportunities might include conducting workshops or seminars by eminent scholars, providing more extensive library services, or providing sophisticated laboratory equipment required for course-related experimentation.

Local centers are the contact points with our students. There will be about 10 local centers for every regional center.

A typical local center will provide a variety of services. The multimedia library will contain computer terminals, video viewing booths, audio reproduction facilities, projectors of various sorts, and microfilm copiers and viewers.

The amphitheatre will be a place for conducting seminars and showing films, and will provide a forum for student and community interaction, which is of high value in any educational system. Aside from administrative offices, additional offices will be provided for tutors and counselors. Here, full-time tutors will be able to meet on a one-to-one basis with students, help them with their academic difficulties, and counsel them on various problems.

At home students will be provided with printed materials, audio cassettes, and home experimental kits. They will also receive regular television broadcasts according to fixed schedules. For other educational services and for controlled examinations, students will go to their respective local centers. In order to make the educational opportunities really accessible to students and neighborhood communities, we are now thinking of introducing mobile learning centers equipped with an array of reference books and audio visual materials.

The land for the first 50 centers has been allocated and we hope to begin construction shortly. By 1982 we hope to have 300 centers, each enrolling about 120 students at the start. It is estimated that each center eventually will be capable of catering to a much larger number of students.

The hierarchy of centers is designed with multiple purposes in mind: First, the centers will provide both simple and complex educational services to students and local communities. Second, these centers will be used as a primary back-up system for the physical distribution network of the University. By 1980, when the educational satellite is expected to be operational, the centers will be electronically linked to central headquarters. Local centers will be connected to a computer network that will be utilized for computer managed and assisted instruction. This latter capability which we expect to utilize extensively will relieve the University from the pressures of increasing over-reliance on tutorial and human resources. Third, the centers are being designed with an eye towards eventually providing a completely individualized and self-paced study system. In such a system, a student will register in a course and come to the center for instruction and examination at will. The idea of mass education capability in conjunction with individualized instructional capability may seem to be self-contradictory, but it is attainable in the proposed FUI system. Fourth, the local and regional center network will be mobilized during summers, for other purposes. We expect that during summer months former tutors will be retrained and made familiar with new courses and procedures. They will suggest improvements in courses and university procedures. New tutors will carry out induction and orientation activities and become acquainted with former tutors. The invisible professors (course authors) will have dialogues with tutors and become acquainted with everyday, down-to-earth problems of tutors and students.

Before mentioning some of the educational methods which we have begun to utilize, I would like to mention an administrative innovation which I felt absolutely necessary to introduce in order to assure the success of the FUI. As you well know, in universities there always exists a gap between the so-called intellectual academia and the not-so-bright administrators who always seem to frown upon the educators' needs. This gap has become even larger within Iranian universities because of a very low pay scale for admin-

istrators in comparison with teaching staff. In the FUI, because of the very nature of its educational system, the ratio of administrative and technical personnel to academic staff is fairly large.

I felt that the success of the University depended to a great extent on closing the gap and eliminating the inferiority complex of non-academics. This was accomplished by proposing an integrated set of university charter which was just approved by the board of trustees. According to our regulations, salaries have become competitive and all the privileges of the academics are also available to non-academics. By putting all staff on an equal footing, I hope the management of the university will become much more efficient.

I mentioned earlier our three bachelor-level programs in teacher education, health sciences and rural development.

It is with regard to these programs that teaching-at-a-distance offers another advantage:

When a villager moves to a city to enroll in a university for higher education, normally upon graduation he refuses to return to his small town because of better opportunities in large cities. In the FUI system, the student will remain and study locally in his home environment. This will strengthen his feeling of responsibility to his community; thereby increasing his willingness to work there after completing his studies.

We have chosen a new approach in developing curricula and in developing the course materials for each of the above mentioned programs. Most of the work to date has been carried out in programs for teacher education and health science areas.

Because of the nature of the teaching-at-a-distance system, we are attempting to make the educational process a measurable one. Although research activities in the past have made valuable contributions in this direction, there still remains a great deal which we have to learn.

Because our aim is to be able to control the quality of our graduates, we are putting a great deal of emphasis on developing a competency-based curriculum. This is being done with regard to our own situation in Iran which in many respects is different from that in the United States.

One of the interesting problems in the teacher education program is the following: Our schools in general do not have teachers who are familiar with modern methods of teaching. If in some schools teachers cannot define concretely their role in a classroom, then our students will not be able to carry out student teaching requirements, and must then rely on micro-teaching simulations, case studies, and cooperative teaching as other techniques.

In contrast to the teacher education program, whole towns and villages will serve as laboratories for students in the health sciences area. Yet we must prepare the students with great care so that they will not overstep their abilities as health-care interns.

Our course production procedures are similar to those of The Open University. Our plans are to carry out extensive developmental testing of courses on sample target populations and at selected local centers before introducing them on a nationwide basis.

Unfortunately, there is not enough time to elaborate on the number of research studies we have initiated to assure the success of our programs. These studies range, however, from determining the entry behavior of students to putting the nature of learning which takes place in conventional instructional situations into behavioral terms. One thing is obvious: our centralized efforts to implement new educational ideas on a large scale will eventually provide answers to some of the very important questions which

have preoccupied educationalists for years. I hope FUI efforts will provide answers to such questions as:

- Can a four-year university curriculum be compressed into smaller time slots?
- Is an education where the outcome can be precisely measured a desirable one?
- How far can we reduce the activities of a teacher in a learning process and still have an effective learning situation?
- Can the type of learning which takes place in informal campus interactions be defined in behavioral terms?

Before concluding my remarks, I would like to comment on two questions which you have probably been asking yourselves: First, why the name "Free University"? Second, aren't Free University programs too ambitious?

The answer to the first question is that the Free University ~~free~~ the student from the bounds and restrictions imposed by a conventional educational system. It allows every human regardless of age, sex, religion, or geographical location ~~free~~ access to higher education. It also does not require expenses on the part of students; it is absolutely free.

The answer to the second question is yes, we are very ambitious. We firmly believe that construction of a revolutionary educational structure from used and old parts is not possible. We have worked two years on initial planning. In the last 1½ years since the University was officially chartered, we have been building infrastructure and starting massive training programs. Six months ago, course production in six areas was initiated. This year is course production year and the year for setting up our physical network. Next year is the year for equipping centers and for the recruiting and training of 500 tutors and counsellors. In early 1977, we will start instructing with an initial capacity of 6,000 students. Our target date for fully implementing our plans is 1984. That may not be the year for Orwell's predictions to come true, but we certainly hope our dreams at the FUI will be a reality.



Richmond Postgate is the principal investigator for the Research Project on Open Learning Systems in Post-Secondary Education. This London-based study has thoroughly examined existing and planned open learning systems throughout the world. Prior to providing the leadership for this study through the University of Sussex in England, Postgate was the controller of educational broadcasting for the BBC.

Systems and Problems in Post-Secondary Education

**Richmond Postgate
University of Sussex**

Since I see my function in the Conference as that of filling in gaps between the contributions of other speakers and pointing out where world experience complements theirs, I would like to call your attention to a book, *Systems and Problems in Post-Secondary Education*, which deals with open learning.

The book, to be published this fall, is the outcome of a study for UNESCO, which provides the basis for my remarks. The UNESCO study was undertaken in 1974 with the support of the Ford Foundation to review a number of open learning projects in a series of case studies, and to provide an analysis of the main common problems, for utilization by planners and educational specialists.

The systems selected for discussion—including 17 case studies, covering 14 countries—are shown in their historical, economic, and social context.

and are described in a commentary intended to emphasize the problems involved in planning and launching new ventures. They were prepared by contributors with considerable experience in education and communications under general direction of the project-team. All three authors—Professor Norman Mackenzie, director of the School of Education, University of Sussex; John Scupham; and myself—have had long and intimate contacts with the setting up of The Open University of the United Kingdom.

Reports featured in the study confirm much of what others here have said. For instance, members of the project team find themselves in full accord with Dr. Samuel Gould's team in being unable to define precisely "non-traditional education." "Open learning" is to the team an imprecise concept, a rallying point of like-minded people, and it would be a mistake to spend too much time defining it. The case studies show the great variety of current initiatives. The meaning given by NAEB is a long way from that given by Sir Walter Perry.

Nevertheless, there are some observed common characteristics of most open learning systems to which I would like to draw attention. These systems have positive attitudes towards innovative plans, interdisciplinary studies, the identification and satisfaction of new needs, and intellectual adventure generally.

Open learning systems tend to be the agents of reform and change: sometimes wholly deliberately, as in Japan, where the National Broadcasting University aims to establish a model institution to counter the characteristics of established universities, and to produce men and women with a trained intelligence to face change and find solutions to the problems it raises.

In Iran, as Dr. Abdol-Rahim Ahmadi said, the Free University is intended as a positive agency for transforming higher education. Less deliberately, open learning institutions, if they prosper, affect higher education by contagion; they are a "good blight." Sir Walter Perry said that in the long run the importance of The Open University may lie in its secondary influence on conventional higher education as much as in the students who join the OU. Also, open learning may become a full partner of the national system of adult education. It is so used in USSR, where distance-education is more fully developed than in any other country. There, half of all students in higher education are part-time students, and distance study is the principal agency for up-dating the adult population in vocational and professional skills. Last, open learning, as it is appearing in developed countries, provides a road to more cultured attitudes and interests and to personal development.

Open learning, however defined, is becoming an important *locus* of fundamental reconsideration of the aims, purposes, organization, methods, and relationships between students and their teachers, helpers, and advisers. It is natural that it should attract people interested in and capable of the imaginative effort, the drive, and the commitment to actualize by example new thinking about education, about the use of new facilities, and about serving new student clienteles.

Open learning, despite the errors inevitable in a frontier situation, deserves continued encouragement, support, and resources sufficient not only to maintain and develop the institutions founded, but also to conduct the research and evaluation needed to plan for the future. Much of what is operating in the 70's is dependent upon research done in the 50's and 60's. Every institution has a duty to make its contribution to long-term developments as well as to immediate necessities.

Sir Walter distinguished two categories of open learning institutions: those which cater to the needs of the individual student and those which, having conducted inquiries, offer a limited number of options designed to

enlarge access to higher education for large numbers. The project team's experience confirms this division, but it feels that both can provide worthwhile services and both can be test-beds of new ideas and practices of universal importance. The experiences of Empire State, Minnesota Metropolitan, and the Community College of Vermont, though they are occurring in a country of very high development, exemplify ideas of universal significance. The "mentor," the "adjunct faculty," the reconsideration of what goes to make an educated person, are concepts of importance to developed and less-developed countries alike.

For, just as the educational problems of less developed countries are not going to be solved by conventional institutions only, so they will not be solved by conventionally trained teachers alone. Open learning is uncovering new pedagogic functions; in some sense, the discarded notion of apprenticeship is re-appearing. So also, particularly among adults with less than average capability for solitary study through the written word, is self-help. It is in open learning institutions that these tentative vulnerable ideas can be explored. Conferences such as this one provide opportunities to exchange experience, to match problems with contexts, and to reaffirm collectively the generalized contribution to world society that open learning is capable of offering.

The Conference is called *Designing Diversity*. From a world standpoint, diversity does not have to be designed; it already exists. Of the institutions studied by the project team, no two were alike; each was one of a kind. This is as it should be. Though much can be learned from the successes and failures of other institutions, no good can come from spreading the idea that one can copy and transport to another country an institution which has been successful in the country of origin. That way lays disaster, as the dismal history of the application of educational technology to education has shown over the last 30 years.

A review of the needs of less developed countries shows clearly that the most urgent and general need lies in the field of creating teachers—more teachers, better teachers, to teach more students better and more relevant courses. This need is head and shoulders above all other needs, and it is in this area that open learning may make its most valuable contribution. For education, though it is also the agency for rescuing, affirming, and preserving national cultures, is also the main source of the trained manpower which could realize national development programs, and respond to the changes required by technological advancement.



Max Rowe is president of Everyman's University in Israel, a project of the Rothschild Foundation where he has served as secretary-general since 1960. Before joining the Rothschild Foundation as assistant manager in 1948, Dr. Rowe practiced law in London. He received his law degrees after his move to England from his native Germany in 1933 and was called to the Bar at Gray's Inn in 1937. He has been the prime mover in establishing Everyman's University and has been actively and thoroughly studying open learning systems worldwide.

An International Perspective On Open Learning and Nontraditional Study

**Max Rowe
Rothschild Foundation**

The main theme of the Second National Conference on Open Learning and Nontraditional Study is a review of the work done and a look into the future. At Everyman's University in Israel we are still in the preparatory stages. I cannot, therefore, speak of achievements. I could, however, share with you the doubts, the concerns, and the challenges that are before us at every step.

I propose to select some of the areas of our activities that call for a reassessment. I shall comment on these in the light of our own limited experience, and I shall draw on what I have seen and heard at open learning systems in Munich, Tübingen, Hagen, Utrecht, Brussels, Mexico, Nairobi, and, of course, the Open University and the various projects in the United States.

Before I set out on this journey, I would like to submit some thoughts on innovation in education.

I suppose all of us who have gone into the open learning business have done so because of a dedication to improvement of the educational environment of our people and a resolution to provide educational opportunities for everybody. We use multi-media in a fashion as yet untried, and we devise novel ways of education. In short, we leap into the future with a zeal that falls not far short of religious zeal.

If anything could be more high-sounding than this, I would like to be told. In fact, I discern a disparity between the nobility of our motives and the reality of our performance.

No one is so conservative, so unadventurous, as the innovator; no one so regressive, so reactionary, as the revolutionary. How did Churchill put it? "It is easier to start a revolution than to carry it forward."

The rapid expansion of a new organization, the exaggerated use of costly media, premature commitments to the public, and political pressures all are effective inhibitors of continuing innovation. No one will, I hope, take me for a Maoist, but I do subscribe to the notion of a "permanent revolution," or a "permanent evolution," at least in the development of educational methods.

One needs a special breed of men for such an assignment: the visionary and the creator who can turn ideas into reality or, as has been said of Professor Weizmann, the first President of Israel: a man whose feet are firmly planted in midair.

I have come away from my visits to open learning projects with admiration, but also with a sense of wonderment that organizations so young could already be so middle-aged. We are all in the one-to-ten year age groups, and yet most of us seem to have settled down to a fairly rigid pattern of operations, as if we had already outgrown the stage of search and adventure.

If we freeze our development process too soon, if we stop prematurely the endeavour which we began with so much hope and valour, we may not have many more such agreeable conferences. Instead, we may all finish up as photographs in disused offices, with the caption: "He hung on for too long, did some good and much harm." (Taken from the obituary notice for your Thomas Paine.)

What is my conclusion? That, as we plan an open learning system, we should support the creative individuals by building into the system the mechanism for continuous review, for challenging all prior assumptions, for adapting to changing circumstances, and for trying out new ways.

Change has always been a major focus of speculative and scientific inquiry. Renewal is ever present in nature around us. Innovation is not optional; it is essential.

In Tübingen, Germany, DIFF (*Deutsches Institut für Fernstudien*) has been created to research into the complex problems of open learning and to test continuously new methods of operations. In Mexico, the Ministry of Education has created a special body known as CEMPAE, for innovations and trials in matters of teaching and learning. These are experimental stations, research stations, from which we have a lot to learn.

I wonder, however, to what extent any of the on-going open learning systems have a permanent review and innovation apparatus.

Of course, there are planning committees at every major project but are they not concerned, in the main, with the organizational aspects of forward

planning, rather than with continuous review and re-assessment, adaptation, and development? In Brussels I was told that a center could hope for innovation, if it happened to have on its staff a man of vision and drive.

This probably holds good everywhere. It is an observable fact that most innovations can be traced back to an outstanding individual, but reliance on him alone might well make development haphazard. He should have the support of a small group of helpers who, together with the creative individual, form a sort of Review Committee.

The newly created Fern-University in Hagen, Germany, is one example where we find this approach. It has, as an integral part of its organization, a special Institute for Research on Open Learning. Its assignments are to stand aside from the day-to-day operations, in order that it could initiate improved methods for open learning, observe the changes occurring around us, and adapt the system continuously.

What are the sort of changes to which we may have to adapt? I shall mention some which may be relevant to other countries, too.

Needs of society

The disadvantaged must be given an ever greater share of educational opportunities; increasing leisure time might provide new possibilities for lifelong learning.

Political developments

If peace came between Israel and her Arab neighbors, a university without a campus might become a university without borders.

Technological advances

In five years' time, we may have video-cassette recorders in every home; in 10 years, we may have computer assisted instruction; and in 20 years, every learner may have his own terminal, linking him to data banks.

Educational changes

There might be added to education, as a passport to a trade or profession, some elements of general or liberal education; there may be a shift from the present competitive learning at school and university to a co-operative effort; and, if we are to be incorrigible optimists, learning might one day become a leisure activity on a par with football or cricket.

I leave this section on innovation with the thought that finding novel methods of teaching or learning is not particularly difficult; making the effort to search for them is the challenge.

I wanted to describe some of the principal elements of open learning and look critically at our first steps; now I shall return to my main theme.

You will not be surprised that I begin at the beginning. The Book of Books does so, presumably because the potential for all developments lies in the creation. Sir Walter Perry, vice-chancellor of The Open University, will surely be able to testify how complex and confusing first beginnings can be. If my reading is right, it is not far from the truth to say that it was Miss Jenny Lee who, so to speak, "fathered" the idea and Sir Walter who "mothered" the concept.

And now some comments on:

- 1—needs and objectives,
- 2—matters of organization;
- 3—methods of operation,
- 4—evaluation.

Needs and Objectives

We all start off from the premise that we must identify the needs of society and plan open learning to satisfy these needs. In England, the priority needs were identified as university courses. Latterly, The Open University has added "post-experience" courses for up-grading people in their skills.

At Everyman's University, the emphasis is on teacher training; in Munich it is on teacher training and vocational training; Teleac, Holland, provides courses in adult education but will, as of 1976, reduce these in favor of its new "Open School" program, which will provide instruction in languages, science, and mathematics at the junior high level.

The BRT, The Flemish Center in Brussels, provides professional courses for farmers, workers, shopkeepers, and lawyers, and general instruction in simple economics, chemistry and consumer problems.

CEMPAE in Mexico provides courses at elementary school level for adults, at senior high school level and courses for teachers.

IMU in Stockholm provides individualized self-learning courses in mathematics for junior high school pupils.

The Institute of Adult Studies of Nairobi gives courses for teachers and, at junior high school level, for adults.

The Chicago TV College offers courses for the first two years of university, and is planning to extend its programs to professional and vocational training.

These examples—and there are many more—seem to suggest that many, if not most, of the courses are conventional and career oriented. I know there are exceptions, but I am speaking of the majority of the courses that are being offered at present. Many of them seem to be of a functional character, designed to help the student get a better job and earn more money.

Now, we need not apologize for this. Open learning renders an important service to the community through providing such courses. Let no one say that if we merely do what the conventional system has been doing for hundreds of years, what is all the excitement about. Such courses are offered because they respond to clearly identified needs. Moreover, it is, I think, reasonable to expect that in the teaching of conventional or functional subjects, open learning might be able to achieve an additional result. Let me explain what I have in mind.

As we prepare our courses, we try:

- to make our courses attractive, so as to induce in the student a wish to learn;
- to make them motivational, so as to keep him at it;
- to structure the courses in such a manner as to develop in the student the skill to study.

If we succeed in these objectives, we might achieve far more than a vocational or professional competence of the student. We might lead him towards becoming an independent learner.

It may not be unfair to say that, by and large, the conventional system does not seem to achieve this, outside a thin layer of the elite. If open learning could, on a broader front, guide its students towards self-learning—and there is every reason to think that it should be able to—this would be a further reason justifying open learning in offering conventional and career-oriented courses.

But should we stop there?

There is a nagging doubt in my mind that we are not confident enough, and not courageous enough, to exploit the vast potential of multi-media open learning. Ought we not go beyond the functional courses and the money-earning diplomas, and provide learning opportunities in areas in which the public ought to be informed or instructed, irrespective of whether or not they have asked for them in the consumer surveys?

Free society depends on an educated society. Is it unfair to suggest that the mass media have had a recognizable share in reducing Western society to its semi-illiteracy? Is it unreal to think that open learning, using the same media and using the best available talents, might provide a vital counter-balance if, in addition to the functional courses, we also planned at least some of our work towards a general or liberal education?

Paul Buck, the former provost of Harvard, spoke of the need of general education 30 years ago, in his well-known report, "General Education in a Free Society." We hear variations of the same theme whenever our thinkers are troubled by the thought that the individual, though our most precious resource, is also grossly under-developed and under-exploited.

Those who speak of general, or liberal, education probably think of helping man to develop, and express, all his faculties and sensitivities, whether they be in the realm of intellect, aesthetics, decision making, or anything else.

You might now be so unkind as to ask me for a definition of general or liberal education and for effective ways of imparting it. My answer is short: I do not know. I have read some of the relevant literature, and I have spoken to scholars, philosophers, and educators. I have come away with the understanding that there is no separate area of knowledge known as "general or liberal education", and that there are no specific courses that could be given in general or liberal education. There might, however, be ways for developing the faculties and sensitivities of man.

When I asked a distinguished philosopher in England about such ways, he spoke of the pursuit of ideas, of an ever deeper understanding of them, without reference to their practical application or functional value; a sort of "pure" learning or thinking, as opposed to "applied" learning or thinking.

Others would wish to add to the curriculum, imaginative courses in the creative arts, philosophy, and history. George Sarton, one of the early teachers of Harvard, suggested that going forward and looking back are not contradictory actions; they complement one another.

Others still would want us to develop in the learner a habit of self-searching and a mind that asks critically:

- What insights have I gained from the data presented?
- How do I discriminate between conflicting views?
- How do I identify excellence of values or of performance?
- How do I reach decisions on incomplete information?

Even as I enumerate some of the elements that might lead towards a general or liberal education, I realize that my statement is vague and incomplete. It probably is not possible to draw a clear dividing line between functional and general education: The two may be interwoven; the same course may well be functional and liberal. It may seek to impart knowledge or skills and also lead to changes of the learner's personality. As we plan our work, we have to aim at the product (in the form of knowledge and skills) and also focus on the attitudes and the personality of the learner.

Helping students to become more self-reliant, giving them instruction in areas which ought to be of interest to them, and changing their attitudes that, in the end, they might go towards lifelong learning for the sheer joy of learning all are very large assignments.

Having mentioned them, I leave this section with trepidation, because I do not speak with confidence on this complex subject. Nor do I have a sense of assurance that we shall rise to these challenges. The daily turmoil of pressing activities—writing guide books, attending committee meetings, organizing student groups, developing media, negotiating with ministries, meeting schedules, and keeping within budgets—is enough to daunt even the stout-hearted from looking for ever wider tasks.

Let me move on to safer ground, to matters of organization.

Matters of Organization

We are all of us, as yet, too young to have evolved a common pattern of organization. Some of the systems are linked to the ministries of education (CEMPAE in Mexico), some to TV stations (ERT in Brussels), some to the ministry and the TV station (*Lehrerkolleg* in Munich), some to universities (Nairobi), and some have their own independent status (OU in England; University of Mid-America in Nebraska, Everyman's University in Israel).

The differing needs in the various countries may militate against a uniform system of organization, but I would like to place before you some thoughts which may be relevant to every open learning system.

Open learning has been likened to an industrial operation. Bringing together the resources of manpower, technology, and economics calls for a systems approach, as we know it in industry, rather than for the conventional academic approach. The academic approach is based on autonomy; on planning by commissions and decisions by peer groups. Industrial administration, on the other hand, is based on a hierarchy, a centralization of authority, delegation from the top, and clear demarcations of responsibility.

Professor Otto Peters, formerly of DIFF, Tübingen, and now the head of the new Fern-University in Hagen, has drawn attention to the close analogy between the industrial production process and open learning.

There are three basic characteristics to every industrial production process:

1. rationalization, so as to use the resources most efficiently;
2. dividing the enterprise into separate functional departments and dividing the work into small units—making possible mass production;
3. mechanization and, ultimately, automation.

From these three basics, we come to specific steps in industry:

- product-oriented research,
- pre-planning,
- final planning,
- centralized management,
- procurement of materials and manpower,
- training of staff,
- setting of production norms,
- assembly line production,
- mass production,
- storage and transport of goods,
- costing and cost control,
- controlling quality and rejection of faulty goods,
- evaluation of profitability.

I leave it to you to translate these steps to industrialized education. The parallels are clearly apparent.

Educators might, at first, be horrified at the notion of the industrialization of education. It conjures up visions of collectivisation and the de-humanization of man. Academics might see in it the end of academic freedom. However, The Open University seems to have shown, through its successful course team work, that academic freedom is, in no way, diminished in an system.

In Israel, we have not yet offered our product to the public and we cannot make final assessments. So far, at any rate, we have not come across any resistance from educators or academics. On the contrary, almost without exception, they have given, and are giving, Everyman's University their whole-hearted support. I believe this has been the general experience throughout the world.

I would make only one qualification. Leading academics in Israel assist Everyman's University, either as members of the Academic Advisory Committee or as anchormen or outside readers. It is another matter when we seek academics for full-time posts. We have been fortunate in finding very talented young scholars to join our staff but, with a few exceptions, they have been reluctant to sever their relations with the research-oriented and department-dominated conventional universities. We have tried to persuade them that work at an open learning center involves them in full-time research, too, but research of a novel kind: the use of multi-media for an improved education. Our argument is persuasive, but the pull of the conventional universities still seems compelling. I can understand it all, but I am convinced the time will come when academics will be ready to make a full-time commitment to open learning.

Methods of Operations

There are infinite variations in our methods, and it is not my purpose to enumerate them. I propose to mention two topics only. In discussing them, I must not be understood as being critical of any project—except our own.

I think we all agree that the emphasis must be on learning, not on teaching; that open learning calls for a new research into better, and more efficient, learning.

I wonder whether in actual practice, we have not reversed the priorities. It seems to me that we tend to put the emphasis on teaching, where it does

not belong, and that our research on better ways of learning is wholly inadequate. One by-product of this has been, in my view, that we use too much television and that we write too many books.

First, television. It seems to me that open learning relies unduly on television. *Lehrerkolleg* in Munich, BRT in Brussels, Teleac in Holland, Monterrey in Mexico, The Open University of the United Kingdom, the University of Mid-America and others use television very generously. Often one finds there is one television program for each learning unit, or one television lesson per week.

How can one decide, in mechanical fashion, on a one-to-one ratio? Ought one not to decide on the number of television programs depending on the needs of each learning unit? Some may need two or three and some, none. Are we not giving the medium an unwarranted dominance, if we start our planning with a fixed number of TV programs, presented at intervals determined by the calendar? With apologies to Marshal McLuhan, the medium is not the message, at any rate not in open learning. We ought not lightly to compromise with quality. If the number of television programs becomes unduly large, and if they must be produced in regular sequence, a drop in quality becomes almost inevitable, and we build mediocrity into the system. If television cannot be of a high standard, should it be used at all?

I recognize there is no single answer to this question. There are instances when it is unavoidable to use television on a very large scale and be content with "chalk and talk" presentations. *Telesecundaria* in Mexico is an example. It provides the full school program at junior high level for children who could not otherwise obtain any schooling. With eight TV teachers and a handful of producers, they telecast daily 18 TV lessons, mostly live, often without rehearsals, and generally with only a minimum of visualization.

Next, it might be said that quality is not easily definable. Often the significance of a TV program might not lie in the teaching of subject-matter alone but also in the encouragement it gives the learner psychologically to start learning or the motivation it gives him to continue with it. Professional production of the subject-matter might then not be the main criterion of quality.

All this is true and there may be additional qualifications. Yet I think TV should be used very selectively, even sparingly, and production should, generally speaking, be of a consistently high professional standard. If anyone departed from these postulates, the burden of proof ought to be on him. (The new Fern-University in Germany will use mainly the printed material and audio cassettes. For the beginning, it will not use any TV, although it may do so, most sparingly, at a later stage; Nairobi uses no TV at all).

Finally, cost effectiveness considerations may often justify the conclusion that simpler and cheaper media could achieve similar educational results, at a substantially lower cost.

Second, preparation of the learning material. I am speaking here of the printed material only. It still forms the most important element of the multi-media package. I would like to ask two questions: first, who prepares the written material? and second, what is to be its form?

Who prepares the written material? There are many answers. In some cases, the academics of the center bear the main burden of writing the textbooks or the guide material (The Open University); in some, experts from outside are invited to write the material (*Teleac Utrecht*, Nairobi); in others, the writing is done partly by the academic staff and partly by outside experts,

working under contract (Fern-University, Everyman's University). In all cases, the center distributes the printed material to its students.

You might like to hear about yet another method, as practiced by BRT, the Flemish open learning center in Brussels. They produce the TV programs but the written material is being prepared and distributed by outside organizations. In a course for farmers, for example, the written material is prepared by the Farmers' Federation and is printed in their journal, which the farmers receive anyhow. In a TV course for workers in industry, the trade unions prepare the accompanying guide material and distribute it to their members. There are three trade unions in Belgium: the Socialist, Catholic and Liberal unions. They have agreed on a common TV program, but each prepares its own printed material. BRT follows this practice for all its other TV productions. It seems to me an example worth emulating.

The heavy burden of creating such material makes the need for setting up a central "bank of learning material" ever more urgent.

What form does the written material take?

In many cases, new and programmed textbooks are being written. The Open University is the leader in this, as in many other respects. At Everyman's University, we have also begun writing our own books. The process is long, wearying, and expensive. We estimate the monthly cost of a team working on the written material to be about \$4,000. If it takes them 12 months to prepare a 12-unit course, the cost of the written material alone, excluding the production of other media, typing and printing, might be about \$48,000.

In our search for an alternative, we are now looking into the PSI method — the Personalized System of Instruction or, as it is sometimes called, the Keller Plan. The Harvard Extension Service uses it for some of its courses; the University of Surrey in England is experimenting with it; and so are others. About 4,000 PSI courses are presently being given in the U.S..

Under PSI, the student receives a few pages of printed material for each unit. These pages contain the learning objective, a mini-lecture, references to recommended, and required, reading and self-tests. When the student has mastered one unit, he presents himself to the tutor for a test and if he passes it, he then proceeds to the next unit—and so ad infinitum.

The cost of PSI is about 20 percent of the conventional cost and the learning results seem satisfactory. A physicist at Harvard told me that he has made a comparative evaluation between internal students who attend his lectures (and students give him a high rating as a lecturer) and external PSI students. He said he has found that his lectures "make no demonstrable difference."

PSI certainly seems the only practical way where the number of students is small. Might it not also be practical, where we have a larger number?

Apart from the economic advantage, PSI shifts the emphasis from teaching to learning, where it belongs. In addition, PSI might train the students towards self-learning, which is one of the basic aims of open learning.

Evaluation

It has, by now, become accepted practice to build evaluation into every new open learning system. I would like to look into one aspect of summative evaluation only.

Tests have been sent to special groups; their performance has been compared with that of control groups; and the usual result has been "no significant difference." Statisticians have told me that where there is a "no significant difference" result, there might well be significant differences within the measurement scales but, overall, there might be no "significant difference." I am so pleased that there are some people about who understand this kind of jargon because I don't. To me "no significant difference" means what it says. I do not know the technical methods of how one arrives at such a conclusion, but I suspect that it is predictable.

We are told that there is built into everyone of us a goal-striving urge, a resolve to achieve our aim. If so, is it not likely that the students themselves make up for any deficiencies that may exist in either the conventional system or the novel experiment? If they do, might this not account, in large measure, for an equalization of results? As far as I know, we have not developed methods for carving out, say, the input of TV alone, and for comparing it with non-TV inputs alone.

Even if this line of reasoning were valid, it would not mean that summative evaluation should be scrapped. On the contrary, it should be retained and even extended.

It should be retained because if it showed nothing else but that students at open learning did as well as elsewhere, this would be an important finding. We could then provide much of the usual instruction with a more rational use of manpower and a reduced number of costly buildings or campuses.

Summative evaluation should be extended. It should be taken beyond comparisons of achievements. Wilbur Schramm has suggested that we ought to be bold enough to test also for changes of personality. We should seek answers to such questions as:

What difference is there between a student at an open learning center and a conventional institute?

How does open learning change his attitude and his aptitude towards learning?

How does he now set about solving problems?

The first tests of this kind have recently been conducted at the Educational TV station of San Salvador. The results have been sensational. The evaluators have come up with the result, after a three-year evaluation, that the pupils who have been taught through educational TV have acquired a greater ability for self-learning, wider horizons, and a better general understanding. Such research findings may encourage us all to shift emphasis from the differences, significant or otherwise, in the knowledge acquired, to the impact of open learning on the personality of the learner. We may find the greater contribution of open learning to lie in this direction.

I end my piece on this note of hope. We are a group of innovators, and I cannot help reflecting on the story of Socrates, one of the first innovators in education. Of what did the conventional educators accuse him? That he corrupted the minds of the people, through teaching them novel things that were "above this earth and below it." His end, as you know, was abrupt and painful.

The prudent among us might reflect that radio and television lift our message above this earth and cable below it. Heaven forfend that a fate similar to that of the great Greek were to await us. I rather like to think of the signal sent by a great French general: "The situation is critical, the position untenable, the outlook perilous—we move forward".

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Opening Higher Learning

**Frederick deW. Bolman
Exxon Education Foundation**

Whenever I hear the phrase "open learning," I am reminded of a cartoon which appeared many years ago—perhaps in *The New Yorker*. It displayed sarcasm about John Dewey and what became progressive education. The drawing was of a small boy crying and stamping his feet in front of a teacher and screaming: "Do I have to do what I want to today?" Open learning may have some of the assets and liabilities expressed by that kid.

In 1973, the Commission on Non-Traditional Study gave as its final recommendation the convening of the Second National Conference on Open Learning and Nontraditional Study to respond to the many other recommendations of that commission. Quite obviously, in both this conference and that held in 1974 in Lincoln, Nebraska, there has been a many-faceted review of recent action in the areas of open learning, nontraditional programs.

and the concept of open universities. Open learning has indeed become a growth industry in the ed. biz!

I shall not attempt to summarize or evaluate the rich offerings presented to us during the three days of the conference. Instead, I wish to follow the theme of Anne Bussis and Edward Chittenden of the Educational Testing Service when they described open education in the lower schools as "a philosophy of learning, a craft of teaching, a vision of life."¹ We have indeed been discussing a philosophy and a craft. In my conclusion I shall allude to the problem of vision and make a modest proposal.

Turning to what I find meaningful about open learning in higher education, my remarks necessarily reflect my personal perspectives and convictions. I shall talk about precursors to open learning which we should not forget, the meanings of open learning today, some prerequisites for open learning, and, finally, what I see as some necessary next steps.

As we must constantly bear in mind, virtually all learning prior to about the 9th century was open learning. From our first knowledge of dialectic through Plato and the stoia of Zeno to the earliest university in Salerno, individuals were left to their own devices. When the inner urge was acted upon, individuals learned as much as they could, as much as they wished. But then came the university, growing slowly to importance in the 11th century and onwards in such outstanding centers as Bologna, Paris, Montpellier, and elsewhere. Learning gradually went in part from open to what we refer to as traditional.

There remain today substantial reasons for the university and traditional modes of learning. The vital functions of the university seem to me to have been five-fold. First, it regularized learning and over the centuries slowly changed patterns of learning in an orderly way. Second, it economized on the price of learning—the *lectura*, now called lecture, developed because, before printing, students banded together to have manuscripts read to them. Third, the university sought to evaluate and therefore set standards of accomplishment. Fourth, the university became a catalytic agent in clustering scholars for research purposes. Finally, as it grew in various societies it became a source of dissemination of both learning and knowledge. (The growth of the agricultural sciences in this country and the dissemination of that learning and knowledge permitted us to move from an agrarian to an industrial society).

When I recite briefly former virtues of traditional learning, I am not just giving the devil his due; more important, I am asserting that I believe the university and traditional learning are a necessary part not just of our past, but also of our future. The university has proven to be a condition of civilization and survival.

But gradually, beginning over a hundred years ago in this country, universities began to desire flexibility not thought of for centuries. While programmatic change had proceeded in many places, perhaps most dramatically with federal intervention to establish the land-grant institutions, Charles W. Eliot of Harvard and others of his time threw the spotlight on the free elective system. More signs towards openness came soon. Correspondence courses were offered by such prestigious institutions as Columbia University and the University of Chicago. Cooperative work-study programs were initiated, first in engineering and then in other programs. Harvard and Princeton struggled to keep up, the former with the tutorial program and reading periods, the latter with Mr. Wilson's development of the preceptorial program. Bennington became one of the early activators of the inter-semester field experience, which has spread in various forms of inter-session and in-

tern experiences about the country. Concomitant was the development of honors and independent studies programs at Swarthmore and elsewhere.

More recently independent laboratory work began under the prodding of Jerrold Zacharias at MIT and others. More flexibility was introduced under the rubric of individually prescribed instruction, which had its birth in the Oak Leaf Elementary School in Pittsburgh but quickly fanned out into higher education. Fred Keller, retired from chairmanship of the Psychology Department at Columbia University, brought more flexibility to learning on campus. Charles Wales, now of the West Virginia University, developed the guided design system to help the individualized learning situation and increase student motivation.

Out of these and other efforts within the university it was well-nigh inevitable that sensitive minds would generate the University Without Walls, Empire State College, University of Mid-America, etc. But I have omitted three other powerful influences not emanating from the university. One is the growth over many decades of programs and opportunities for learning within industry. Some of these, such as the program at General Electric, were at a level higher than offered by any university at the time. Another important influence on our thinking was the United States Armed Forces Institute (USAIFI), which demanded and got the General Education Development test of high school equivalency and offered great opportunities for further learning—and was blocked from awarding degrees by the professional education establishment in this country! Finally, there has been the long development of proprietary post-secondary education able to create flexibility for consumer requirements.

My reason for this hasty review of ancient, medieval and modern higher learning is to try to put into perspective what we are searching for in our pursuit of open learning.

Open learning, as I have heard it discussed and exhibited at various conferences, has four salient features. It really means individualized learning in four respects: **pace, locale, mode, and structure**.

First is the matter of individually paced learning. Today many—perhaps 10 per cent or more of American undergraduates—opt out for a while and then return to earn a degree. The average age of the undergraduate classes in America is advancing. The baccalaureate degree is being stretched in our society simply because many individuals want to take their own time to achieve their own goals. In higher education we are approaching the point where, socially, provision of access to knowledge is not unlike provision of food to babies—self-demand, Dr. Spock, and all that!

And why not? This shift really requires little change on the part of the traditional establishment. Princeton University now admits a limited number of neighboring adults to its regular classes without too much commotion. Other institutions have done this for years. Adult and continuing education schools and centers of universities have provided institutionalized self-paced learning for decades. In the 1940's New York University had its Division of General Education ministering to over 12,000 adults, not one of whom was seeking degree credit; all were working for professional, vocational or non-vocational satisfaction through lifelong learning classes.

The individual pacing of learning has been aided by programmed learning within and outside the institution, with and without the computer. Properly guided in sequences of work experiences, the individual can increasingly develop at his own speed and achievement to attain higher levels of competence without either fear or drag of group level. There is no log, nor is there a Mark Hopkins. There is the individual given resources to progress

in accomplishment at his own pace, and he alone holds the stop watch. Institutional resources for such individually paced learning are here and now. And they are increasing in our society.

A second element of open learning is the individualized locale of learning. Here we go beyond the walls of traditional institutions, but not without the resources of those institutions. The Open University of the United Kingdom is a massive example of this element. It delivers the traditional learning wherever you are. In effect it says, "Do what you are doing, but add this tradition to your career wherever you are, and at your own pace, so far as the rate of courses you will take is concerned." The University of Mid-America wishes in like manner to bring learning to the learner, with course content perhaps less traditional than The Open University.

Individualization of locale has been practiced in America for some decades. I referred earlier to the efforts of industry to provide learning next to the office, laboratory, and factory, and the provisions of the Armed Forces Institute. The development of two and four-year degree programs for nurses in hospitals comes under the same rubric of bringing learning to the learner.

Perhaps this element of individualized locale needs further work on our part. There are efforts to help commuters use their train time to learn accounting. Have you ever wandered into a railroad car outfitted with desks, blackboard, and amplifier system? They exist. There are researchers working on learning in areas which could amount to invasion of privacy. Prenatal, sleep, and other periods of life may yet be invaded in the name of a learning society! But let us halt this theme by pointing out that we may still be dealing with traditional learning when we speak of bringing learning to the individual.

A third element of open learning is use of individualized modes of learning. We are approaching—though not yet entering—the citadel of open learning.

Pascal called Man a thinking reed. But Man thinks only because he has four instructive senses, plus problems he wants to surmount. Today we have revolutionized the way data are presented to our senses. Like the Chinese symbols connoting "crisis", we must realize we are on the borders of "danger" and "opportunity".

Our opportunities for open learning seem limitless. The Carnegie Commission on Higher Education, which paid relatively scant attention to open learning, at least devoted one volume to the use of new media in learning.²

New media for individual use include technical developments to feed information to us far beyond anything heretofore available. We now have the video cassette in living color, soon available for anyone to turn on at his local library or community college, or eventually in his home. Programs for computer-assisted instructions will become increasingly available in localities and finally in the home. Then will come Hypertext—the electronic variable access library some day to be available in the home. We are on the verge of being able to supply stimuli of anything any individual may wish to our senses.

Meanwhile we realize, not for the first time, that work and other experience make a difference for open learning. Testing and other evaluating organizations are busy developing plans as to how to evaluate such non-traditional learning and helping those in traditional institutions to devise measures of life experience for degree credit.

Let me turn to the focal issue in open learning, my fourth point: individually structured learning. Earlier, I said that to me "open" means individual learning. But if the entire structure of learning in higher education is individual, how can we handle this? Obviously we cannot easily do this for the professional! Also, this conference, its originating Commission on Non-Traditional Study, and, indeed, the Carnegie Commission on Higher Education really never took lethally serious issue with graduate education in the arts and sciences.

Ideally, all learning is student centered. But this fourth element of open learning means that the aims, objectives, and accomplishments of a learning sequence are set by and for the individual. Long ago William James pointed out that life itself progressively brings into focus our career and other aims, and that thus we continuously shed conflicting and distracting ambitions. Even so, however, many goals not of an individual's making are pressed upon him or her, and it is necessary to question one's own thinking as carefully as possible.

That is why a mentor, some form of counseling, is necessary. We need mentally to "walk through" with someone else what we want to do before we prepare ourselves to do it. And hopefully those we talk to will have some skill in helping us to probe our goals and also some skill in helping us to discover what learning sequence will lead to a finally chosen objective or objectives. With a mentor or mentors the individual can then draw up a unique learning contract: what to do, when to do it, where to do it, and with what resources to do it.

However one shapes a nontraditional learning experience, there are certain prerequisites which must be provided. I shall cluster my remarks about four such requirements and address each one briefly. They are **counseling, evaluation, resources, and financing**—all appropriate to the task at hand.

We sorely need counseling centers accessible to persons of all ages who wish to pursue their education. Such centers should help the individual set his objectives, determine the modes of learning, and guide him or her to the available resources. Ideally such centers should aid the individual in knowing when he has achieved his objectives, or at least inform him as to where such assessment may be had. Finally, counseling centers should be equipped to help the individual probe what future action should be taken, whether in further learning or change of career. Such counseling centers can be operated by universities and colleges, or they may be operated independent of our traditional institutions.

Such counseling centers could become largely, and perhaps altogether, self-supporting by charging fees for services rendered. Personnel for the center could be drawn from part-time work of skilled professionals and judicious use of retired persons.

A second prerequisite for open learning is evaluation of individual learning. The Commission on Non-Traditional Study was attentive to this matter of individual assessment and urged further work in the area of test construction. The Educational Testing Service has already made progress in assessing learning creditable for a college degree. We need two kinds of evaluation. The first should be diagnostic, to help the individual know more about himself and his abilities. The second should be concerned with competency, or level of attainment. Much of this work is already being carried on in various ways by colleges and universities. But also, much needs to be done to broaden the scope of testing to meet nontraditional experiences.

Winston H. Manning of the Educational Testing Service has said that 1400 colleges and universities now have some form of off-campus instruction, and he estimates that by 1980 one of every four students will be part-time. It is imperative to be able to evaluate non-campus and nontraditional experience both for purposes of granting credit towards a degree and, just as important, for informing the individual as to what he has accomplished and what he may do next. As institutions become more skilled in life experience assessment, why can't they open their doors to the non-degree adult on a fee basis to cover testing costs? We say ours will become a learning society with lifelong learning for many individuals. The demand for testing non-traditional learning will surely grow beyond current needs.

The third prerequisite for open learning is that both human and material resources be available. The resources of a community vary somewhat with its size. But the advancing technology for learning makes possible resources of many kinds everywhere, and upon individual call. We are on the verge of becoming a learning resource society. Some of these resources lie outside our traditional institutions, but many resources for lifetime learning should be provided by our universities, colleges, and two-year colleges. As more people want more resources for learning, our traditional institutions will have to change to meet a broader spectrum of ages and educational needs. In the scant 25 years remaining before the year 2000, our colleges and universities simply will not be able to remain in that so-called steady state.

Finally, we come to the problems of financing open learning. There will be bills to be paid for counseling, evaluation, and resources. Also a problem, in perhaps a growing number of cases, will be the cost of foregone earnings for those who require full-time intervals of learning.

The issue of foregone earnings can be handled in a different way, as we see from patterns already emerging in Europe. Perhaps we must develop a "learning security" concept, financed by a tax on employee and employer, as an analogue to our social security concept. If it is true that over three-quarters of our population want to learn more about something,³ then acceptance of some federal legislation in this area could be expected.

As we look to the future, I see at least three things we must do to develop the many aspects of open learning in American higher education. Orderly development will depend upon the creation of experimental development centers, the study of all types of resources, and intensive analysis of the best ways to finance such education in the future.

Experimental development centers are on the horizon, if not a bit closer. Many of them—providing traditional learning in new ways and new learning in new ways—have been discussed at this conference. We give birth to new things on a pluralistic basis, and up to a point that is creative. But the time may be at hand to consolidate efforts and conduct experimentation in a more systematic way. We need careful assessments of learners at all ages and stages, and for this we must collect data which can be analyzed. We need controlled experiments with new and old media, again with data which can be accurately analyzed. And we need a method of disseminating findings from various research and development centers to those in other centers so duplication of effort is minimized and acquisition of fresh knowledge is maximized.

We need a careful study of resources for open learning linked to the experimental development centers. The future role of traditional institutions must be assessed, and what transformations these institutions must make should be blueprinted. Further, the role of other institutions from libraries to museums, the performing arts and business, industry and the government must be evaluated and defined. There is a growing cooperation among

these institutions today. What works best, and what is abortive, must be studied and advice to the nation provided. Similarly such a study must assess our current counseling centers, estimate our future needs, and tell us how we may meet those needs.

We need to study the financing of open education, and such study must be linked to the creation of experimental development centers and the study of resources for learning. Perhaps there must be changes in the way past payments were made for higher education in order to accommodate future changes in education. What can equitably be the role of municipal, state, and federal resources? What portions should industry and business bear? How much can individuals afford? The total cost to the nation of open education must be examined both in terms of quality of life and social and economic benefit to the nation. The rate at which opportunities for learning should be extended needs to be considered in terms of our national economic future.

This conference has dealt ably with the diversity of means for human learning, but such exclusive emphasis has also been a weakness. The fundamental issue of unity of purpose for a learning society has been shattered by each session assuming its own unique purpose or goals for learning. And the goals, when articulated, have been too narrowly defined. Perhaps a conference called *Designing Diversity '75* should give way to one next year called *Designing Unity '76*! The many parts and possibilities for learning should be gathered into some unified service to this country if we are to act upon our concern for the quality of life. The many diverse aspects of learning, both traditional and nontraditional, must be supportive one of another, yet together designed to serve specific national goals.

At the outset of my speech I used an expression of others to describe open learning: "a philosophy of learning, a craft of teaching, a vision of life." The 45 former sessions of this conference have been strong on the first two points. I find we have been neglectful of the final and important catalytic element: a vision of life. No other land can give us that perspective, nor can any folk provide a model for another.

Perhaps such vision can best be achieved for us by the establishment of a national council representative of all affected parties, such as industry, labor, and government. These three are the largest consumers of higher education. They are also, with ancillary help from other groups, best equipped to define our needs and, in concert, to lead us to a national commitment as to ends as well as means. The seats of power in our country must, with much help, bring into focus paths for our future conduct. Then, and only then, will our developing abilities in diversity of learning come to full fruition and usefulness to the American people.

Our bicentennial year should be more than nostalgia, for we face problems proportionately as great as those of 1776. Today we have massive poverty, abnormal unemployment, great human injustice, a sagging economy, future problems of energy, the need for a fresh analysis of foreign relations... in short, we must reshape the American dream and reshape American action.

I challenge ourselves and our colleagues to form such a group of highest national importance as I have suggested. Let me be both brash and hopeful when I name it a **National Council for a Learning Society**—the epitome of our spirit of 1976. All forms and means for learning now require new vision, that certain symbol of a future.

NOTES.

1 Cited in *The New York Times*, May 4, 1975, sec. 13, p. 8.

2 Carnegie Commission on Higher Education volume, *The Fourth Revolution: Instructional Technology in Higher Education*. (McGraw Hill Book Co., New York, N.Y.)

3. Report of the Commission on Non-Traditional Study, *Diversity by Design*. (Jossey-Bass Publishers, San Francisco, Calif., 1973, p. 15).

Management & Financing Patterns

This conference theme focused on the management, organizational, and financial patterns emerging in the field of open learning and nontraditional study.



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Characteristics of a Regional Open Learning University

**Jack McBride
University of Mid-America**

I would like to talk about open learning as an ideal; about what an agency like the University of Mid-America (UMA) can become; and about what steps are being taken to attain this ideal. UMA is a technology-based open learning system operating in a four-state region in the Midwest my comments will be specifically, but not exclusively, addressed to the use of communications technology in this open learning development.

The concept of UMA has been evolving over the past five years. We began as the State University of Nebraska (SUN) project, an agency of the University of Nebraska which was formed to offer courses statewide via the Nebraska Educational Television Network and other technological means. As our developmental work at SUN progressed, it became apparent that the issues we were addressing were best dealt with on a larger scale—that they were more easily resolved on a regional, rather than a statewide, basis. Thus, after

extensive planning, the University of Mid-America came into being. Formed by a consortium of five state universities in Nebraska, Kansas, Iowa, and Missouri. UMA is a not-for-profit open learning development corporation. SUN still exists, serving as the Nebraska delivery system affiliated with UMA; and similar delivery systems are currently being developed in the other three UMA states. All delivery systems are to be developed and operated by the states, with technical advice and assistance from UMA. UMA is responsible for course development, and for a variety of research and evaluation efforts; the states are responsible for course delivery, and for accreditation of the courses through the existing postsecondary institutions in each state. Thus we have achieved a compromise between central planning and state control.

The decision to regionalize operations was made with two considerations in mind. One, of course, was to serve the broadest possible clientele, and since we are an operational experiment, to extend our data base for research and evaluation studies. The other consideration was fiscal: the development of high-quality open learning courseware is an expensive proposition. By serving a wider clientele, we intend to maximize the cost-benefit ratio, and by insuring a higher enrollment level, we should realize enough of a return, in the form of tuition dollars and courseware fees, to offset the necessarily high cost of course production.

To focus upon the fiscal scope of the project, let me recite some figures. The project's extensive research and design have been supported by several branches of the Department of Health, Education, and Welfare at the level of \$1.8 million during a four-year period ending in January of this year. UMA's most recent grant, \$1.4 million from the National Institute of Education (NIE), supports our first operational phase, with a commitment of an additional \$2.1 million for the second year of a carefully articulated five-year developmental period. And NIE has expressed intent to fund UMA at a similar high level for the remaining three years of development, subject, of course, to additional review and evaluation. In addition, we have received over \$600,000 in consortial funding to date, from a variety of public and private sources. We have at the moment over \$2 million in proposals under review. These high levels of seed money are essential to offset developmental costs in the early stages of the program. And these developmental costs would not be significantly lower for one state than they are for four. By regionalizing our efforts, we can achieve economies of scale which, according to the regional projections upon which our five-year plan of operations is based, may enable UMA

to achieve fiscal self-sufficiency by the end of the five-year period.

As the result of our experience to date, we have identified 12 desired characteristics of an ideal open learning system. These characteristics define the shape we hope our system will take before the completion of the developmental period, in 1980. They are evolving as UMA evolves, and are subject to modification as additional experience is gained. Nothing about UMA is set in concrete; the first requirement for meeting our goals is a degree of flexibility, which will allow us to respond promptly to changing needs.

The 12 keystone open learning system characteristics are as follows:

1. The open learning system should have as its primary target audience adults who are interested in continuing their education, but who cannot or are reluctant to participate in campus-based programs. A policy of unrestricted admission should be pursued, so that anyone who wishes to learn may do so.

The studies of the Commission on Non-Traditional Study and the Newman Commission demonstrated that a significant portion of the adult population was not being served by traditional institutions of post-secondary education. Special SUN surveys indicated that in Nebraska, two per cent of the adult population would be interested in taking open access courses via the media. In developing enrollment projections, SUN halved this estimate, then halved it again to assure a conservative goal. Nebraska estimates project an enrollment of 546 per course per year, a figure which SUN's experience to date indicates is attainable. Using the same methods, we project an enrollment of 4,000 per course per year in the four-state UMA region. These projections indicate that a sizable clientele for open learning does exist in the UMA region.

The policy of unrestricted admissions is quite important, if open learning is to be truly open. We recognize that not all potential students will be capable of achieving success in college-level work; but they must be given the opportunity to try. And UMA is developing a diverse curriculum of credit and non-credit offerings, to meet the needs of learners of all sorts - with both college-level courses, and courses to meet specialized needs.

2. A vigorous research program must be undertaken, to foster an understanding of the needs of learners in the region, with a commitment to using that understand-

ing in the planning of learning opportunities to be made available through the system.

For a program like UMA, understanding the needs of our clientele is difficult, but critical. Because of our primary reliance on "study at a distance" materials, we do not have the close day-to-day contact with learners that is the rule in conventional institutions. But we have discovered, and continue to discover, a great deal about our learners. The initial SUN surveys gave us basic characteristics of the clientele, and allowed us to identify in the target population 15 sub-groups. The UMA Office of Research and Evaluation and our participating states are now undertaking additional clientele surveys to amplify and refine these data, with an eye towards specifying more clearly both the diverse adult populations and their specific needs.

With the SUN delivery system in Nebraska now operational, we have an expanding source of data on enrolled open learners. And the four pilot learning centers currently in operation across the state give us direct contact with these students. We are daily getting a clearer picture of the open learning clientele in the UMA region, and we are implementing procedures whereby this information can be used by UMA curriculum and course developers in regular and meaningful ways.

- 3. The system must provide learning opportunities which allow the student flexibility in constructing his own learning sequence, so that UMA courses do not have single entry and exit points, nor single evaluation requirements, for its learners.**

UMA is experimenting with the development of modular courses, which will allow learners maximum flexibility in selecting what they want to learn. A modular design is currently being employed in the development of an open learning course in Biology, based on minicourses developed by Dr. Sam Postlethwait of Purdue for the Biological Sciences Curriculum Study. The material in this course is arranged in subject "clusters," in such areas as Genetics, Energy, Human Biology, and Ecology. The student may elect to study only one or two minicourses, depending on his or her needs, either for small amounts of credit or on a non-credit basis; or he or she may elect to study enough minicourses to complete a course in Introductory Biology. The 12 clusters include enough material for a two-year basic Biology course, so the learner has a wide range of course content

choices. We intend to continue experimenting with modular courses. In the future it may be possible for learners to devise their own learning sequences, by selecting units from several modular UMA courses.

- 4. The system must have the willingness and ability to try to meet the learner where he or she is educationally, by recognizing individual differences in entry levels, and by affording the learner advice and counsel as to how best to use resources available throughout the system to achieve personal and professional goals.**

This task has implications both for course development efforts, and for delivery. UMA's course development teams must design courses which match the diverse characteristics and needs of its clientele, and make these courses flexible enough to allow for student variance. Part of this task may be accomplished through modular course design; another part, through diagnostic testing for student placement, through allowing students to "test out" of courses or parts of courses, or through the credit/non-credit option.

The state delivery systems are UMA's frontline of contact with learners, and it is through the delivery systems that advising and counseling of students will take place. In Nebraska, the SUN delivery system is contemplating a statewide network of learning centers; four of them have been operating since the beginning of the initial SUN course delivery in September, 1974. These centers are experimenting with various tutorial and counseling services to students, providing a location for student meetings with course faculty, and providing opportunities for other personal contact with learners. In addition to adding an important personal dimension to the delivery system, the learning centers are being designed to act as educational clearinghouses, putting learners in touch with the local, state, and national educational resources they specifically need. SUN also maintains a 24-hour inward WATS line, to provide tutorial assistance to enrolled students.

- 5. The system must reduce constraints on how people can learn by employing various educational media and materials, and personal contact with faculty counselors and with other learners. Thus, persons can learn in ways most comfortable for them.**

UMA courses employ a variety of media in various combinations, depending upon individual course objectives. Courses currently in use or in process of development employ broadcast televi-

sion, newspaper, video-cassettes, audio cassettes, text, and a workbook/study guide. Several will have computer-assisted instructional components.

UMA courses are developed according to a systematic instructional design process, in which media are selected for a course according to an assigned instructional role. Thus, the various media components in the course are closely interrelated, and complement one another in their instructional purposes. There is a planned redundancy across the different components of a course, so that learning is reinforced by hearing, viewing, or reading the different course components. This redundancy also makes it possible for the learner to concentrate upon those media which best suit his learning style: he need not refer to all components to complete the course. Advances in communications technology over the past few years have made technology-based open learning possible; and UMA intends to use each new technological development which holds promise for the improved development and delivery of open learning opportunities.

6. The system must provide learning opportunities which enable the learner to learn at times and places convenient to him, without prohibitive interference with job, family, or other obligations.

Through the means discussed previously, by the development of flexible learning opportunities, and through the careful use of educational technology, UMA can offer learners a variety of learning options, thereby enabling them to fit their education into existing personal schedules.

Access is a crucial point, for the restrictions of time and space, brought about by responsibilities to job and family, have prevented too many learners from participating in post-secondary education. Through the UMA delivery systems, and through courses designed to take maximum advantage of the flexibility of the delivery systems, we want to deliver instruction at times and places convenient to learners on their own terms. In Nebraska, for example, the SUN delivery system has been broadcasting the television components of UMA courses statewide twice weekly: once on a weekday evening, and once on the weekend. For those learners who are still unable to view the broadcast, or are in need of review, a complete set of video cassettes for each course is contained in each learning center. A part of the course arrives home with each learner's weekly newspaper. Additional home study materials and audio cassettes are designed for complete transportability, so the learner may use them in any locale. A 24-hour inward WATS line

provides continuous access to the UMA faculty member in charge of the course. And a learning center coordinator is there to provide additional tutorial assistance, counseling, and other personal contact. Where possible, UMA courses and delivery systems will be designed to give the learner maximum flexibility in time, place, and learning opportunities.

7. Learning opportunities provided by the system should not be entirely dictated by the requirements of individual disciplines, but should address themselves to subjects or problems that draw upon whatever disciplinary expertise is appropriate.

This characteristic, too, is learner-oriented: it means providing content material which is determined by the learners' needs, rather than by the constraints of subject and methodology imposed by academic disciplines. All UMA courses, even those in conventional academic disciplines, are developed with this characteristic in mind; and this presents a special opportunity for interdisciplinary developmental efforts.

A UMA course currently under development stands out as a prime example of this approach. With generous assistance from the National Endowment for the Humanities, UMA is developing a course in the Cultural History of the Great Plains. This course covers all aspects of the history of Great Plains culture, from those of the Plains Indians to contemporary agricultural and urban societies. Thus, the course spans a number of academic disciplines: history, sociology, anthropology, art, music, literature. Where appropriate, methodologies of the various disciplines are adapted. But the primary aim of the course is to show the learner the inter-relationship of various aspects of culture, and their development over time in a single place. Thus, the learner is given the opportunity to view a region and its cultures as a continuous whole. This is an exciting project. Not only is it an in-depth study of a neglected area of American history, but it is an opportunity to develop a new approach to the study of regional history which we believe will be applicable to other regions of the country.

8. Wherever possible, local and regional resources already in existence should be used by the delivery system, in cooperation with post-secondary institutions, to expand the educational opportunities available to the learner in his own environment.

UMA itself is an example of inter-institutional cooperation. Five state universities in four mid-western states founded and are currently cooperating in UMA. In the state of Nebraska, the SUN delivery system is fostering inter-institutional cooperation by strengthening its ties with existing post-secondary institutions. For example, learning centers have been opened in conjunction with Kearney State College and with the University of Nebraska Extension and Cooperative Extension Divisions; and the Nebraska delivery system hopes to open another learning center soon, in co-operation with Northeast Nebraska Technical Community College.

The UMA delivery systems will also employ combinations of other resources. With the cooperation of the State Library Commission, SUN administers tests to learners at public libraries across the state. In the other UMA states, state planning coordinators have been appointed to begin the planning and initial operations of their open learning delivery systems, systematically relating them to higher educational institutions and existing resources, and adding UMA capabilities in production, research, and evaluation. Public and commercial television and radio systems and networks, existing university extension centers, libraries, newspapers, and other resources are being drawn upon as delivery systems are developed.

9. The system should have reasonable costs, both to individuals and to society, so that the individual and societal benefits of learning become available to the target learners at no economic penalty in comparison with the cost of attending traditional campuses.

UMA has developed a comprehensive five-year plan of operations projecting both costs and income of the system for the full five years. These projections, based upon an extensive study undertaken for UMA by the Esmee Fairbairn Economic Research Center, project that UMA can operate at cost levels to students and society which are comparable with or lower than those of traditional post-secondary education. Furthermore, these studies show that, given an adequate level of seed money to develop a critical mass of courses, and given student enrollment at projected levels, UMA may become fiscally self-sufficient at the end of the five-year period, at the same cost levels. This plan is continually being re-adjusted to reflect new data on operating costs, income, and enrollment; but we thus far have no reason to alter the conclusion that UMA can operate at competitive cost levels, and that UMA can attain some measure of self-sufficiency.

10. The system should emphasize learning rather than the meeting of arbitrary standards of time, courses, or curricular requirements; and achievement of learning by students should be recognized, however it occurs.

The UMA Office of Research and Evaluation is working to develop innovative methods for assessing learning progress, and to determine methods of minimizing learner failure in UMA courses. We do not claim to be able to eliminate learner failure altogether; no post-secondary program has yet accomplished that, nor is one likely to. Given the nature of UMA's clientele, some failure is to be expected. But we must learn to recognize what constitutes learner failure.

Since it is UMA's purpose to offer lifelong learning opportunities, freeing the learner of the necessity of pursuing a concentrated program in a short time span, we must expect that our learners will sign up for an occasional course, "stop out" of the system for a time, and perhaps return later for further courses. We do not hope to prevent this situation, since the whole purpose of the UMA system is to offer opportunities which make a lifetime approach to education possible. But some learner failure—the real "dropping out" of education—is caused by the failure of the system to adequately respond to the learners' needs. If UMA is to be successful, we must eliminate this systemic failure wherever possible. We are attempting to do this by devising a system which will allow the learner maximum flexibility to pursue learning opportunities, and by thoroughly testing all our courseware before it is released in final form. All UMA course materials are fully field-tested in the UMA region. Data on weaknesses in the course materials are isolated and corrected in a revision before the course is made available for full-scale distribution. UMA continually seeks to upgrade its evaluation methods, for maximum input into the course development and revision process.

The statewide delivery systems provide the opportunity for personal contact with individual learners, and the means for certification of educational achievement. Through the use of learning centers, WATS lines, faculty visits, and other personalized strategies, the delivery systems will try to provide encouragement and assistance to learners in every possible way, to prevent discouragement, and to make the learning experience as enjoyable as possible.

The delivery systems will also offer various credentialing systems to meet the learner's needs. UMA courses will be offered for credit through post-

secondary institutions within each state. And the individual states are encouraged to investigate the use of such innovative credentialing programs as CLEP and CEU, as well as new programs yet to be developed. We are also investigating the external degree concept, and the granting of credit, at least in certain circumstances, directly by UMA. We hope to offer a broad range of opportunities and services to learners in the UMA region.

11. In courses meriting college credit, the system should provide a level of academic quality no lower than that of a traditional university, so that work accomplished through the open learning system is fully accepted by other institutions.

UMA is employing a number of procedures to assure the academic quality of its courses. Each course team includes a full-time resident content specialist, who works in conjunction with instructional developers, professional media specialists, and evaluators. Content for the courses is generated and reviewed by a distinguished national panel of content advisors, each an expert in his field. UMA curriculum development is directed by an Academic Council, composed of five academic and administrative staff members from each of the participating universities. Noted authorities are retained as senior course advisors. For example, Dr. Edwin O. Reischauer, former ambassador to Japan and Professor of Japanese Studies at Harvard University, is overseeing the development of the UMA Japanese Studies course. Dr. Henry Steele Commager authored the original concept for a Great Plains Cultural History course. Dr. John Hanna will serve as senior advisor for a World Food and Population course.

Accreditation is another check on quality. At present, UMA courses are offered for credit through appropriate departments of the participating universities. Thus, as a final check on quality, departmental faculty must concur before credit is granted. These requirements apply not only to UMA courses, for which credit is granted, but also to non-credit courses. It is UMA's announced intent that its courses will be of a quality equal to or higher than those offered on-campus.

12. The system should have more openness to self-examination than has heretofore been the case in post-secondary education. This openness includes a commitment to evaluation of learner achievement, to evaluation of effectiveness in meeting institutional and learner objectives, to incorporation of the results of

these evaluations into policies and procedures, and to research that will contribute to generalizable knowledge about how the educational franchise can best be extended to all who wish it.

The final test of the UMA system lies in its ability continually to assess its own progress, and to respond to these assessments through meaningful adjustments in its operating procedures. Because UMA is a pioneering project, we have no clear precedents to follow. And this makes our research and evaluation efforts doubly important, since we may set the precedent upon which others will base their plans and operations. Therefore, we have extensive on-going programs for the gathering, analysis, and dissemination of data on system operations. And we are continually striving to upgrade our procedures for responding to these data as generated. We are conscious of our role as a pilot project and a model, and realize that our efforts are being watched throughout the region, and nationally. Therefore, we continue to explore all avenues of open learning, and to document successes and failures, so that others may gain from our experience. Dissemination is an important part of UMA's mission.

Thus far, I have been describing the UMA open learning model as a reality and as an ideal, and discussing the administrative and organizational steps being taken to bring these two aspects of the system closer together. But there are other organizational, administrative, and management problems—pesky problems, real problems—which must be solved if the system is to realize its potential.

What procedures can be developed to keep tuition and instructional kit course costs low enough to meet the economic capabilities of students, yet at a sufficient level to enable self-sufficiency? Here is a practical dilemma.

How can we improve the turnaround time on evaluation data, to insure that substantial formative and summative evaluation data are available for use in the course development and revision processes?

What means can be developed to recruit and maintain quasi-permanent staff on "soft money"? Our course teams are often supported by individual course development grants. Staff continuity becomes a real problem. But this is only one aspect of the larger problem of building a broad base of fiscal support incorporating multiple revenue sources. Thus, UMA's consortial funding plan.

There are problems of copyright, and of clearance of materials. In order to avoid reinvention of the wheel, for operational economy, and in order to expand course offerings, the acquisition of open learning courses produced by others is appropriate and desirable. Under what circumstances can they be made available? What are the best procedures for evaluating them for academic acceptability, for technical and media proficiency? If such acquired courses require adaptation, according to what plan can it best be provided?

Under what conditions, and through what procedures, can UMA's produced and adapted courses most appropriately be made available to open learning delivery systems in other sections of the country? With the approval of NIE, UMA has developed and will soon test a plan to employ the Great Plains National Instructional Television Library to distribute UMA courses on a competitive lease fee basis. In order for open learning to operate effectively throughout the nation, a comprehensive program of exchanging open learning materials must be developed. Courseware—quality courseware—must be shared.

What procedures can be developed to take appropriate advantage of the abundance of talents and resources of the faculties and staffs of the participating institutions in UMA course development and delivery, yet at the same time maintain the continuity and efficiency which centralization provides?

And what should be the relationship of an open learning system to the faculties of conventional institutions of post-secondary education? Particularly in a time of decreasing college enrollments and operational support, faculty members can look upon educational innovation as a threat. I continue to believe that open learning can be made complementary, rather than competitive; that open learning can stimulate additional students for this nation's campuses; and that UMA can provide a valid and valuable educational service to the citizenry without hardship to traditional institutions.

How can we most appropriately operationally relate the specialized and individualized creative talents and abilities of diverse content, design, evaluation, and media specialists so they develop and produce a course as a unified team according to finite budgetary and time constraints? Who should manage the course development team, and according to what operational process should team members inter-relate? The Open University has employed an academic as course administrator; we are working with an instructional developer as

team manager. We have tentatively identified five different approaches to course development—each with its own personnel, time line, and budget. Each is being put to the test.

Finally, how can we find ways to insure responsive, effective management at all levels of the open learning system? We are experimenting with various advisory panels, and with student representation at different levels of the program. We need to continue to seek learner input into the management of the program. We also must contemplate what form the UMA corporation will take in the future. Should we bring in new members? On what basis, and with what privileges? Or should we restrict ourselves to operating in the charter region, to insure that we do not spread ourselves too thin?

The answers to these and other problems which will present themselves lie in the future. Tune in to next year's open learning conference, where I hope to be able to report certain solutions to you. Others will certainly take longer. But they must be solved, if we are to insure that all UMA products are consistently of the highest quality. And when I speak of UMA "products," I am not speaking only of courses, or the delivery systems. As a pilot program in open learning, UMA is producing a new system of open education—this system itself is UMA's ultimate product. And the system as a whole must be of quality, in order to produce outcomes which are generalizable and transportable to other regions of the country.

We have necessarily entered into an extensive and complicated process in our operational investigation of open learning. Because UMA is an experimental program, we must concede the strong possibility that not all our efforts will be successful; there will be failures along the way. We must learn to deal with them, to learn from them, and to turn them to advantage. If we can do this, we can succeed, as long as we keep in mind the attitude which, according to *Diversity by Design*, defines open learning:

It is an attitude that puts the student first and the institution second, concentrates more on the former's need than the latter's convenience, encourages diversity of individual opportunity, and de-emphasizes time and space or even course requirements in favor of competence and, where applicable, performance. It is not a new attitude; it is simply a more prevalent one than before. It has concern for the learner of any age and circumstances, for the degree aspirant or the person who finds a sufficient reward in enriching life through constant, periodic, or occasional study. It is an attitude that can stimulate exciting and high quality educational progress....

This quote ends with a well-considered warning, one which UMA and similar systems must keep firmly in mind:

...it can also, unless great care is taken to protect the freedom it offers, be the unwitting means to a lessening of academic rigor and even to charlatanism.

This message is clear: the system must maintain a high level of self-awareness and honesty to avoid cheapening and debasing the very ideals to which it is committed. We believe UMA has this awareness and honesty today; and we will do all in our power to nurture and maintain it, through an inquisitive attitude which takes nothing for granted.



Dean Jamison is chairman of the economics and educational planning group for the Educational Testing Service. In this capacity, Dr. Jamison provides the leadership in the examination of new open learning systems with respect to the range of alternatives from which to select for the most cost-effective results.

Cost-Effectiveness in Open Learning and Nontraditional Study

**Dean Jamison
Educational Testing Service**

The chairman requested that we begin by describing our first involvement with open learning. I got into open learning and nontraditional study strictly as a consumer, and I remain much influenced by that experience. In about 1960, or perhaps in 1964, I got up at 6:30 one morning, turned on the TV set, and saw Harvey White teaching Modern College Physics from Berkeley, John Kelly teaching Modern Algebra from Berkeley, and Fred Mosteller teaching Statistics from Harvard. I took each of those courses, got credit for one of them, and found them a highly stimulating addition to my high school experience. The talking head approach that I guess all three of these courses utilized was, in my case, quite effective, even though it was a relatively low-cost approach to the use of television as a media. The excellence of the instructors that were selected in each of these three courses made them highly exciting, compared with the options I had in high school and,

means for interaction between the student and the system. These are both called passive interaction system in the sense that the system does not demand a response of the student, he is free to do or not to do his correspondence lesson. There is nothing other than the long-term rewards for getting through the course that presses the student, requires of him a response.

The next group of somewhat less passive interaction mechanisms are tutorial groups - weekly or monthly meetings between a group of students and a tutor; these are frequently part of an open learning system. Summer sessions and perhaps, much more in the future than now, various forms of computer-assisted or computer-managed instruction, may also be utilized. Again, it is at the discretion of the student to initiate this contact with the system, but once the contact is initiated, at a CAI terminal or at a session with an instructor, there is a reasonably high degree of interaction that provides both stimulation for the student and information to the system about how the student is doing.

Finally, one can conceive of much more active mechanisms for interaction: a computerized system for mailing frequently (or at a schedule proposed by the student), requests for him to get his next correspondence lesson in, and tailored questionnaires and examinations. By prompting his schedule, providing system-generated requests to which the student needs to respond in order to stay in the system, an open learning system then can provide a much more active form of interaction.

I am expressing my own feelings now, because, at least to my knowledge, very little research exists on alternative interaction systems. But I do have a number of observations or prejudices that I've developed from occasional associations with open learning systems. One of my prejudices is that we should be trying much more active forms of interaction than we now do. A second consideration is that in the actual budgets of The Open University, a considerable amount of the marginal cost of the systems per student cost goes into the provision of live instruction - summer sessions or tutorial groups. Those are costly. Only some students choose to use them, and in some cases, if required, they are a major inconvenience for students, particularly, as with The Open University, summer sessions away from home. Those are highly expensive when compared with correspondence or a computerized form of schedule prompting. For those reasons, I would think that a relatively lower level of emphasis on live instruction and, perhaps, much more optional use of it for students who want

to use it and can pay for it would be directions in which to go in terms of operations.

In terms of research I think we should be planning the development of our federally-sponsored open learning systems and, to the extent they're interested, state, and private ones in ways that systematically vary a number of these parameters. Our experimentation now should be with something other than television vs. face-to-face instruction, or television vs. radio, because it seems to me that the literature already provides us pretty good answers to questions regarding selection of media. We should introduce much more experimentation on alternative forms of interaction between the student and system in order, first, to find out how these affect things like learning and drop-out rates, demand for the systems, and student attitudes toward the systems, and second, how they affect the learning itself. So I feel that is an important direction in which to turn.

The third general area is that of assessment and accreditation, in which there are important economic considerations, because in many ways that gets to the heart of what open learning is about. I sense, for example, in discussions with people from the University of Mid-America and others concerned with developing innovative open learning systems, a constant tension between the extent to which the system is designed to provide an easier-access and perhaps lower-cost substitute for conventional post-secondary education on the one hand vs. a new kind of education designed to satisfy a somewhat nebulously defined alternative demand by a different set of people wanting, not credits toward a college degree nor the kind of intellectual content that leads to such credit, but rather something different. The whole question of assessment and accreditation and the importance that one is going to assign to that set of issues depends strongly on this question of the purpose of the instruction, of the extent to which the course is designed to be a substitute for conventional post-secondary systems.

I tend to think more from the point of view of a person or an institution that's trying to provide a better access and lower cost - and perhaps even a higher-quality - means to traditional content post-secondary education and the assessment problems that rise in trying to attain those goals.

Methods of assessment are varied. Let me just discuss methods and purposes, the kinds of things that people want to assess, and what the range of options are in terms of both the cost and what you are trying to do. Methods of assessment include the time-honored mechanism of how long the person has sat in a classroom, and then whether or not he

has done something judged to be satisfactory by his instructor; and assessment by examination, the CLEP program and other kinds of examination entirely. Something that is now very much of concern to a number of individuals at Educational Testing Service is the assessment by way of a portfolio of the individual's backgrounds and experiences—the kinds of work experiences, the social or community participation experiences, etc.—somehow summarized and put together in a portfolio, the analogy being to an artist's portfolio. These are the principle methods of assessment, plus various means for transferring accreditation.

Purposes of assessment vary. One purpose of assessment is selection—the College Board Tests, for example. Another purpose is to provide credit that labels a person for the labor market. A college degree given by a university tells something to social colleagues, potential employers, and others about the kinds of competence an individual has. It might not be a very good way of doing that, but it certainly is an important function of educational systems as perceived by students. They want those degrees, not just knowledge—or at least a large number of them do. So there is this labeling function of assessment and accreditation for the labor market.

Another purpose is simply for instruction. The act of assessment can be an important instructional device itself. When properly utilized it can also be used for the tailoring or individualization of instruction. One of the important objectives of open learning systems is to move much more toward the latter two uses for assessment: to tailor instruction and to be an aspect of the instructional process itself, rather than toward selection and labor market labeling. But, as we consider the design of open learning systems, it is important also to keep those other functions of assessment clearly in mind. Principally, one is concerned with assessing cer-

tain cognitive achievements. But increasingly one is also concerned with what kinds of things are being assessed, assessment of interpersonal skills, and assessment of physical or psychomotor skills. You can know all the obstetrics in the world from the textbook. In fact, I have read one or two of those textbooks myself. But I sure would have hated for my wife to have delivered before I got her to the hospital, because I didn't have the manual skills required. There are assessments of types of competence that need to go much beyond the traditional assessment of how much topology one knows. And finally, there are assessments of different types of things. Traditionally, we are concerned with assessing classroom experiences. Increasingly, we are going to have to be concerned with assessing work experience, with assessing social experience, with assessing community participation, etc.

In considering alternative methods of assessment and accreditation, these purposes and various other considerations need to be kept in mind. The whole cost of assessment can vary dramatically, depending on what you are trying to assess and particularly on the extent to which you make it a labor-intensive process. Because, if you move much toward assessment of portfolios rather than standardized examinations, you very quickly move into a position where you are depending a great deal on assessment that you probably have to justify, or wish to at least partially, in terms of other benefits, such as instructional benefits.

Interaction mechanisms and assessment alternatives seem to me particularly to be areas of choice with important economic implications for the design and operation of open learning systems. I would hope to see greater research attention paid to these directions. Even prior to that research, I feel that enough is now known from literature and from casual observation to suggest some departures from current practices.



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Cost-Effectiveness in Social-Historical Context

**Stephen P. Dresch
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The National Commission on the Financing of Post-secondary Education, fortunately, left few legacies. But, it might be said, those which it did leave seem to be almost entirely of negative value. In no case is this more true than with respect to its contributions to efficiency measurement, unit costing, and the like. Admittedly, the composition of the Commission virtually assured that it could make no positive contribution of substance. And an emphasis on efficiency certainly must have seemed innocent enough to a group which had to appear, at least, to reach some sort of consensus on something. But the consequence has been to unleash a horde of "cost-effectiveness analysts" whose contribution, at best, will be to obfuscate the forces operating to alter the nature and functions of education. Unable to measure and incorporate into their simplistic unit cost linear programming and optimal control models, the truly important variables impinging on education and its role

in society, these analysts will continue to produce contemporary equivalents of Ptolemaic epicycles, analytical excesses the irrelevance of which can be useful only to support preordained conclusions.

The most serious inadequacy of this proliferating fraternity of cost-effectiveness analysts is that in their assessment of efficiency in production, they have no idea what is being produced. With what kinds of variables are they concerned? Credit hours (lower division, upper division, graduate, degree, and non-degree, *ad infinitum*, refinements of which should keep them employed to the end of time). Degrees produced (by field, level, etc.). Retention rates (by type of student, field...).

Presumably, if Behemoth Motors and Sundat produce two cars which are identical in value to the consumer of automobiles, and the second absorbs only half the real resources (labor, material) of the first, we can conclude that Sundat is more efficient. Can we reasonably make comparable claims about credit hours and degrees?

In economics one attempts to evaluate something with respect to its final use, and in the case of education (as well as autos) this inevitably takes us outside of the plant or production establishment.¹ And to take this step immediately confronts us with an environment, changes which inevitably alter the relative effectiveness of alternative allocations of resources. Thus, the optimal automobile, taking into account resources absorbed in production and in use, is not the same in 1975, with gasoline at 60 cents per gallon, as in 1972, with 30-cent per gallon gasoline. Yet this step of confronting the environment has been carefully avoided by cost-effectiveness entrepreneurs, and by educators generally. Ignoring the environment, our discussions exhibit so much faddism. Topic succeeds topic: institutional vs. student support, support vs. non-support, moral education, traditional vs. nontraditional education, etc. Each topic is addressed in a virtual vacuum, with all participants sharing one fundamental but always implicit premise: that there exists some "right" answer. The only source of disagreement concerns what, in fact, that right answer is. In the academic realm, the *reductio ad absurdum* of this approach is the suggestion of a colleague of mine (whom I hope, without much faith, was facetious) that social scientists concerned with education should design the "ideal" educational system. Ideal for whom? Under what circumstances? Given what constraints? Even to raise such questions is sufficient to indicate the absurdity of this preposterous approach.

The point, simply, is that one cannot divorce education from its broader social environment, an environment which is not the same today as it was 200, or even 10, years ago. What was ideal (cost-

effective) for a society dominated by a clerical-merchant-industrial elite is unlikely to be ideal for a scientifically rationalized technocracy. What was ideal for an era, only recently ended, of persistent excess demand for highly educated labor may not be ideal under emerging conditions of a persistent saturation of the highly educated labor market. What was ideal for a system of continuous, relatively rapid growth of population and labor force may not be ideal for a regime of stabilization and contraction.

In attempting to identify the implications of a changing environment for the evaluation of open learning and nontraditional study, it is necessary to begin with a somewhat broader purview, addressing such questions as why it was that "traditional higher education" (closed learning?) enjoyed such remarkable success until the relatively recent past, and what it is that has so suddenly terminated this period of euphoric growth. In the process, it will be possible to identify those changes in the environment which have served to "create" nontraditional study and render it a possible "cost-effective" alternative to traditional higher education.

Clearly, the current sense of uncertainty in post-secondary education has not emerged *de novo*; the "new depression" in higher education has been a recurrent topic of conversation since the late 1960's. However, this perception of crisis has undergone a fundamental qualitative change over the last three years, and especially over the last year. As best reflected in Earl Cheit's Carnegie Commission volume, the original new depression was conceived as primarily a "financial crisis," not as a reflection of serious instability in the fundamental relationships between higher education and the rest of society.² The stresses exerted upon institutions were perceived as specific, impinging on particular components of the system, and while the sheer number of these particular strains insured that virtually all institutions were affected to some degree, only for a few did the wounds appear to be potentially fatal. The rest would muddle through and emerge more-or-less intact.

This harried, but ultimately complacent, attitude received its first serious jolt in the late spring of 1974, when statistics were released indicating a substantial drop in the college entrance rates of white, male high-school graduates, the prime beef of the collegiate packing plants. What, in its origins, had been viewed as only a temporary shock resulting from the end of the draft could no longer be explained away so easily.

Since at least 1965, when Allan Carter³ first pointed out the demographic facts of life, higher educators had known that the rapid growth of the

late 1950's and 1960's could not persist into the 1980's, but no one believed that a 10 or 12 per cent decline in the size of the college-age cohort (18-24) would lead to a decline in levels of college enrollment; rates of college attendance, which had increased from 9.1 per cent in 1940 to 20.5 per cent in 1960 and further to 30.6 per cent in 1970, were confidently expected to stave off the day of demographic reckoning. That confidence was destroyed by the experiences of 1972-74.

These experiences, themselves disquieting, had a second, even more chilling consequence. Scholarly attention to the increasing educational attainments of the population had originated with the emergence in the 1950's of interest in economic growth and the discovery of the "unexplained residual," that component of growth which could not be explained by the raw increase in the economists' factors of production: labor and capital. The search for the unexplained residual was on, and although fragments have remained elusive, a significant fraction became identified, directly or indirectly, with education. Edward Denison, in his grail-like quest for the sources of economic growth, became the champion of the princes of higher education.⁴

In natural progression, this identification of education as a significant source of economic growth led to the development of human capital theory, which attempted to augment orthodox income distribution theory to include this newly discovered factor of production.⁵ In contrast to the somewhat round-about identification of education with aggregate growth, the human capitalists went to the heart of the matter, the relationship of education to individual incomes, and in the process gave educators a second grail as sacred in its own way as Denison's. Suddenly, public service advertisements could proclaim (somewhat misleadingly) that if you did not go to college you would sacrifice \$200,000 in lifetime income.

Now, I might point out, higher educators had, at this point, come much closer to a measure of cost-effectiveness than have the current crop of unit cost analysts. While the latter continue to look only at phenomena internal to the educational system, and even within this domain exhibit an astonishing naivete, traditional higher educators had found and (for admittedly self-serving reasons) capitalized upon a real consequence of education.⁶ Not surprisingly, however, they were not eager to press the case beyond the propaganda level, e.g., by attempting to assess the "cost-effectiveness" of individual institutions in terms of the income and other post-schooling experiences of their students.

The weakness of both the economic growth and human capital analyses was that they could not explain why education appeared as it did in rela-

tion to individual and national income. Growth theory identified the contribution of education via an accounting identity, while human capital theory focused on *ex post* rates of return. What we have discovered over the course of the early 1970's is that this relationship between education and income is not an immutable law. It is now becoming possible to demonstrate that the apparent stability of this relationship was the consequence of a unique succession of events, involving changes in technology and in economic and demographic structure.

As I have indicated in the *Journal of Political Economy*,⁷ between 1929 and 1948, although the college-educated proportion of the labor force increased from 5.2 per cent to 6.7 per cent, on an average, the college-educated constituted the same proportion of employment **within industries** in both years. And, while the college educated increased even more dramatically to 12.9 per cent of the labor force in 1969, roughly 60 per cent of this change can be explained by inter-industry shifts in employment. In short, the period since the 1920's, and especially since World War II, has been one of remarkable change in economic structure, and this change has been one which necessitated significant increases in educational attainments.

However, this was also a period in which the demographic environment was least conducive to major changes in adult educational attainments. The rate of increase of the college-age population slowed dramatically in the 1930's and actually became negative between 1940 and 1960.

In juxtaposition, these two phenomena—rapid economic change and a contracting college-age cohort—served to create a persistent excess demand for highly educated labor, characterized by, first, high and sustained pecuniary rewards to college level educational attainments, and, second, rapid increases in the rate of college attendance and completion.

Economists and educators who failed to consider these sources of change in college attendance necessarily failed to see the implications of the war and post-war increase in births, which over the very short period of 1958 to 1964 served to double the population of 18-year-olds. Because the excess demand persisted (since these inflated cohorts would begin to enter the labor force only in the late 1960's and early 1970's), rates of college attendance continued to increase. When these swollen and highly educated cohorts did finally hit the streets, it did not take long to convert a situation of excess demand into one of excess supply.

Two aspects of the preceding period of growth are of particular importance, especially with reference to nontraditional study. The first I would char-

acterize as a pervasive process of technological rationalization, the result of which has been a change in the vocational function of education. In the terms employed by Jürgen Habermas, the emphasis in education has shifted from the transmission of "extra-functional qualifications" required of an authoritative elite to transmission of instrumental, functional qualifications required of a technocratic elite.⁸ In the process, much of traditional education concerned with socio-cultural certification has been converted into a consumption activity, and as such there is little justification for maintaining it as a precondition for the acquisition of technical knowledge or as the preserve of the young.

The second aspect of the growth process which should be noted is that change in economic structure has, in the past, taken place at the "growth margin," through what Norman Ryder characterizes as "metabolism," as opposed to "mutation."⁹ That is, change has been accomplished through appropriate channeling of people coming into the system rather than through rechanneling of people already in the system. This is fundamentally a characteristic of a system experiencing rapid growth of population and labor force.

This history of continuous growth contrasts sharply with the conditions which will prevail over at least the intermediate future. Continuing change in economic structure will suddenly render valueless the skills and competencies developed by individuals in the past. On the one hand, deteriorating conditions facing older cohorts of educated workers will deter young people from entering the highly educated labor market. On the other, de-

mands for expertise in newly emerging areas will primarily be met through rechanneling of older educated workers, who will require only specific, specialized retraining.

This process will continue until the clot in the age distribution of the highly educated population, consisting of members of the inflated war and post-war birth cohorts, finally begins to be mercifully eliminated by death and the infirmities of age after the turn of the century. The interim will be a traumatic period, for both the young and the old. Children of the middle class, 1940-60 birth cohorts, will face deteriorating opportunities and a blockage of paths for meaningful career development. If education of a cultural-consumption variety has any value to them, as an alternative to work as a source of self-identity, it will be clearly nonvocational and nontraditional. Simultaneously, their parents, whose very existence deprives their children of traditional opportunities, will also find their expectations underfilled and their careers disrupted. For this group, too, education may become the mechanism by which frustrations are compensated, while also serving as a device for recouping as much as possible in the face of continually contracting opportunities.

In this emerging environment, there may indeed be a place for nontraditional education, which is equivalent to saying that nontraditional study and open learning may come to constitute a "cost-effective" means of meeting social and individual demands.¹⁰ However, nontraditional education will displace (to a degree) traditional education, not because it is the wave of the future, but because it is the trough of the past.

NOTES

¹ Hanushek, Eric A., in an upcoming issue of *New Directions for Higher Education*, concerned with productivity in education, explicitly addresses this subject.

² Chot, Earl F. *The New Depression in Higher Education*. New York, N.Y. McGraw-Hill, 1971

³ Carter, Allan. "A New Look at the Supply of College Teachers." *Educational Record* (Summer, 1968)

⁴ Denison, Edward F. *The Sources of Economic Growth in the United States and the Alternatives Before Us*. New York, N.Y. CED, 1962. "Measuring the Contribution of Education (and the Residual) to Economic Growth," *The Residual Factor and Economic Growth*, Paris, France, OECD, 1964, and *Accounting for US Economic Growth, 1929-1969*, Washington, D.C. Brookings, 1974

⁵ See Schultz, T. W. "Investment in Human Capital." *American Economic Review* (March, 1961) and Becker, Gary S. *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. New York, N.Y. Columbia U.P., 1964

⁶ Surprisingly, the statesmen of higher education continue to wave the banners of the "explained residual" and human capital theory, as evidenced by the statements of Roger Heynes,

president of the American Council on Education, Albert Shanker, president of the American Federation of Teachers, and James Harris, president of the National Education Association, before the 1974 White House Conference on Inflation. See Heynes, Roger. "Higher Education and Inflation," pp 506-640. Shanker, Albert, statement, pp 841-851, and Harris, James, "The Economics of Education," pp 687-711, all in *The Health, Education, and Welfare, Income Security, Social Services Conference on Inflation Report*. Washington, D.C. DHEW (Sept. 19, 1974)

⁷ Dresch, Stephen P. "Demography, Technology, and Higher Education Toward a Formal Model of Educational Adaptation." *Journal of Political Economy* (June, 1975)

⁸ Habermas, Jürgen. *Toward a Rational Society, Student Protest, Science and Politics*. Boston: Beacon Press, 1971

⁹ Ryder, Norman. "Two Cheers for ZPG." *Daedalus* (Fall 1973)

¹⁰ Note, however, that these will be the demands of the relatively affluent and already highly educated, and perhaps of the children of these groups. Open learning and nontraditional study are not likely to be perceived as cost-effective by the traditionally educationally deprived, young, or old.



Post-Secondary Open Learning Systems: Cost-Effectiveness and Benefit Considerations

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During the last decade and a half economists have begun to join the ranks of other social scientists who have been concerned with analyzing the functioning of the educational system and its role within our society. To my mind, the principal positive result of such applications has been a broadening of the questions educators, educational researchers, public representatives, and the public itself are asking about our educational system. In particular, economists bring a rather broad framework to systems evaluation under the rubric of cost-effectiveness analysis and cost-benefit analysis.

The distinction between these two types of analyses is sometimes blurred, although the distinction is clear in a technical sense and centers on the difference between effects and benefits. Economists use "effects" to refer to the various dimensions of system outcomes with which one might be interested in educational systems terms. Examples would be student cognitive develop-

ment, student affective development, the number of students the system enrolls, the number it graduates, etc. The term "benefits," on the other hand, refers to a **valuation** of these multi-dimensional outcomes so that all may be summarized in a single index such that the outcome index is directly comparable with the cost index used. This usually means measuring benefits in dollar terms (although other metrics are theoretically possible for both costs and benefits, such as a utility index), and thus we have seen a host of studies looking at rates of return to educational investments in which the costs of the investment are compared with the future income benefits that may be received by program participants. However, it cannot be overstressed that these cost-benefit analyses are, at best, partial findings in that many valued outcomes of education cannot be easily translated to a dollar metric; indeed, some outcomes cannot be even measured.

These last two observations have prompted many educators to reject the work of economists in education as too narrow—that is, as focusing on only quantitatively measurable benefits and often only on those that can be measured in dollar terms. I must say that I generally concur with this feeling in that the limitations of this type of analysis for policy decisions are apt not to be sufficiently stressed. Nonetheless, I do believe that the overall framework is necessary to educational evaluation—most research focuses on short-term effects, often to the complete neglect of examining both system costs and longer-run individual and societal benefits. The economists' framework, on the other hand, stresses the analysis of costs, effects, and benefits in an integrated fashion in order to compare alternative system technologies and discover which is most cost-effective or most cost-beneficial.

It is somewhat difficult to apply this framework in very concrete terms to the evaluation of post-secondary open learning systems (OLS) in general. It is not quite clear what constitutes an open learning system, although the term usually connotes greater than traditional openness along the dimensions of system access, content, and structure. Nevertheless, my experience with what I would think of as open learning systems does suggest a number of considerations that follow from utilizing cost-effectiveness and cost-benefit frameworks.

First, let us examine the issue from a cost-effectiveness framework, where effectiveness is used in its general sense of direct educational outcomes of the system. Most open learning systems utilize teaching/learning technologies different than the traditional full-time faculty/full-time student live classroom interaction method through which most of us received our formal schooling. A good many of these open learning systems need to bridge a

geographical distance between teacher and learner, and thus rely on technologically advanced communications media such as television, radio, video tapes, computers, films, filmstrips, audio cassettes, and various print media. Several decades of research have been conducted on the relative effectiveness of these media vis-a-vis live classroom instruction and vis-a-vis each other, primarily in terms of the learners' cognitive development. The overwhelming conclusion of this research (see Jamison, Suppes, and Wells [1974], Schramm [1973], Dubin and Hedley [1969], and Chu and Schramm [1967] for reviews of the literature) is that there is no significant difference in student cognitive learning between these various media.

Before examining what the implications of the results of this research are it is important to realize what these results do **not** say. They do not say that everyone can learn equally well through any medium of instruction, only that the **average** results are about the same. That is, it may well be that some types of individuals learn better through one medium and other individuals learn better through another medium. Therefore, it is possible that the average level of learning could be raised substantially by providing different groups of individuals with that combination of instructional media best suited to them. This question has received hardly any research, and until some guidelines are established, it may well be useful to be redundant, providing the same content module through various media and trusting the learner to choose that learning path to which he or she feels most suited. This is usually essential to open learning systems anyway, since it allows the flexible scheduling of learning activities which is needed to make a reality of open access goals.

The above caveat notwithstanding, this large body of "no significant difference" research does imply that, to the extent we are interested in cognitive outcomes, our medium-of-instruction choice decisions should concern themselves very heavily with the cost side of the picture. These findings are very encouraging to the economist, who sees productivity increases in most sectors of the economy come about through the use of more advanced technologies, usually capital-intensive ones, while the education sector stagnates in this respect due to what many see as the continued use of a very labor-intensive, "handicraft", type of technology.

What particular combination of instructional media will be most cost-effective in an open learning system obviously needs to be analyzed within the specifics of each OLS situation. Nevertheless, in the face of the above research results, it is disturbing to see many such systems concentrate on higher-cost video technologies, often to the exclusion of lower-cost audio and print technologies,

which for most uses seem to produce equivalent cognitive effects and which cost significantly less. Often the emphasis in television production is on fancy productions of the highest technical quality, following *ad hoc* rules of thumb like devoting 100 hours of teacher preparation time to one hour of presentation time. This has resulted in costs of about \$20,000 per television course hour for The Open University and probably comparable figures for some of the television-based courses in the University of Mid-America system, while much simpler television productions could be done for one-twentieth of the above figure (see Layard [1972]).

Further, it must be realized that these high cost/high quality production decisions may be a pedagogical disadvantage in that they lock you into a production that is not easily revisable after completion, nor does its development schedule usually allow for much time to be spent on formative research endeavors. Wilbur Schramm (1972), in a recent survey of the research on the effects of various instructional television strategies, concludes that the two guidelines that emerge are that presentation should be simple and that students should actively participate in the learning process, findings which he says should "gladden the heart of a budget officer" (p. 55). Open learning system developers should realize that dollar costs are opportunity costs in the economist's sense; that is, given a limited budget, by developing high-cost courses you are foregoing other opportunities for the use of that money, such as the development of a greater number of courses. Trade-offs, such as those between course quality and course variety, need to be explicitly considered and investigated.

The preceding remarks are limited in that they apply primarily to the extent with which we are concerned with cognitive outcomes. To the extent that we are interested in other outcomes, such as the drawing and retention power of our program—which is especially vital to the success of open learning systems—existing research has little knowledge to offer. Expensive media productions may well increase enrollments and reduce drop-outs; some instructional television producers argue that high-quality, entertaining programs are needed to allow an OLS to compete with commercial broadcasting offerings. While this may be so, it is also likely that more course variety or lower tuition (or other alternative uses of these resources) could also accomplish these objectives. Which means would be most cost-effective needs to be investigated.

Part of the problem in applying a cost-effective-framework to OLS development is that such a framework is foreign to most system developers. Economists are rarely part of an OLS development

or evaluation team; at best they are brought in as consultants to satisfy outside evaluators, but do not form an integral part of project management teams. Expenditures, as Leslie Wagner (1973) suggests in a look at The Open University, all too often conform to Parkinson's Law and expand to fill the available budget without explicit consideration of their alternative uses. There seems to be an implicit presumption that we should design an operational system as best we can, finance it somehow, let it fly, and hopefully make modifications through feedback generated once the system is operating. One problem with this procedural mode is that our collective knowledge of how such an open learning system can best function is so rudimentary that the choice of an initial format for the system becomes almost random guesswork. Second, beginning with only one format and looking for problems that would require its modification will generally preclude trying formats that are quite dissimilar to the original one. There are indeed difficulties in developing a system that is at once both operational and experimental. Nonetheless, one of the most important characteristics that I see in a truly open learning system is that it be open structurally and administratively—open to radically different ways of doing things and flexible enough to attempt them as an integral part of its operating mode.

Such considerations seem especially important in examining alternative formats for those resources that will vary directly with system enrollment. In a large-scale system those resource costs that vary directly with the number of students enrolled—such as the provision of home study kits or local learning centers or resource people—become the major system expenses, and thus total costs can be reduced considerably by careful attention to these variable cost components.

When we look at open learning systems in a broader vein, in what we may loosely call a cost-benefit context (although not all cost and benefits may be put in a dollar metric and thus this terminology may be technically incorrect, despite its conformance to common usage), other considerations arise which in some senses seem even more important than those above. Carnoy and Levin (1975), in a very recent critique of educational media evaluations, suggest that most research on instructional media costs and effectiveness has been too narrow.

On the cost side there is too often an emphasis on direct institutional costs, to the neglect of important components of the total cost to society of the endeavor. An important example of this type of cost is the time and costs involved on the part of the learner in participating in an OLS. Alternative OLS formats involve different student efforts, and these

need to be explicitly considered in the program design. Resources that are contributed—such as volunteer time, broadcast time, or broadcast facilities—probably involve social costs and also need to be examined explicitly.

When we start looking at effectiveness in a broader context (that is, thinking about the individual and societal benefits of an open learning system) we confront a number of serious questions. For example, the non-cognitive outcomes of the educational process may be at least as important as the cognitive outcomes; there is even some evidence to suggest that individual income and status success may be more a function of the former than the latter (see Gintis [1971]). There has been too little research into the question of the affective changes caused through schooling, and this issue is too often ignored in OLS design and evaluation plans. It seems to me that a university degree attained through four years full-time residence at a college or university will likely have quite different effects on a young person's development and attitudes than will the attainment of an equivalent university degree through an OLS system. The nature of these potential effects must be carefully examined.

One rationale given for the development of post-secondary open learning systems is to provide educational opportunities for those individuals who have not been able to avail themselves of a university education. Many of these individuals are from the poorer income classes and have not been able to afford the time nor money for a college education. Carnoy and Levin (1975) question the fairness of providing the latecomers to the system—those of the working class—with a lower-cost university education. Further, they suggest that the employment benefits of an OLS degree, such as that of The Open University, may turn out to be less than those offered to traditional university graduates, due to what they see as a class bias in the distribution of social rewards.

We need to consider more carefully the goals and processes of the educational systems we are developing. We must remember that institutions

that are born today may not be fully operational for 10 or 15 years. We may now be designing modes of education that will dominate the 1980's and 1990's. We need to think collectively about the needs of this future world and what role the educational system can play.

From my own point of view, I see too much emphasis on traditional curricula in current OLS efforts. I see too little concern with developing new structures that function more cooperatively and holistically than our universities have. There are some who hypothesize, with some justification, that open learning system efforts are primarily being developed to stabilize traditional institutions faced with declining enrollments. I see ourselves as educators believing we know too much and trusting others too little. Efforts to involve potential learner clienteles in OLS design and governance are generally insufficient. Market surveys utilizing cost-saving, programmable, close-ended questions may not reveal the needs and desires that people have for learning opportunities that could be revealed through open-ended dialogue. I fear that the use of high fixed-cost technologies can dictate a scale of operation and a consequent rigidity that is inhumane and has difficulty responding to different local and individual needs. I see too little attention paid to dealing with the everyday work, home, and general environmental conditions that people face. I feel more emphasis needs to be placed on collective discussions of the problems people perceive and on education designed to be responsive to their desires. (Interesting efforts along these lines have been made in Canada, Colombia, and some African nations with the aid of radio and video and audio tape technology.)

I realize that these last few comments are in some respects a quite personal perspective, but it seems to me that such concerns grow naturally from taking a broader than usual perspective on our efforts. For post-secondary open learning systems to realize their potential and be responsive to the needs of our society, now and in the future, it is necessary for us to give careful consideration to potential costs, short-term effects, and long-range benefits.

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Program Effectiveness and Related Costs (PERC): An Overview

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There are many studies of student learning, college impact, and effectiveness as well as studies of college costs, as evidenced by the extensive list of references at the end of this paper. However, several problems exist with the way in which these studies have been either designed or used. The design difficulties occur largely on the effectiveness side.

Most research on effectiveness does not explore significant learning outcomes. Those learning outcomes studied are examined in highly standardized and narrow ways, generally using commercially available tests, questionnaires, and attitudinal surveys. Such strategies do not deal adequately with programs like Empire State College (ESC), which emphasizes student educational goals and objectives. Furthermore, they do not fully assess "value added" by an institution or program (Micek and Wallhaus, 1973; Hartnett, 1974; Astin, 1975). A second problem with effectiveness

research is that few studies of student outcomes successfully link change or development to the program or institutional learning experiences. Two lengthy longitudinal studies, Newcomb's at Bennington (1943) and Perry's at Harvard (1968), are exceptions; they provide, through case study analysis, a kind of linkage between program and student change not normally seen. However, the design problems with most effectiveness research projects are not as serious as the way in which cost studies are often used.

Much data is available describing costs: per credit hour, per FTE student, per degree produced, etc. But little is said in these studies about what students actually learn, the *raison d'être* of education. With an abundance of cost data readily available, there is a noticeable tendency to use the lowest common denominator method of decision-making in higher education: to choose strictly on the basis of what is less expensive. The recent demise of the innovative James E. Allen, Jr., Collegiate Center at the State University of New York, Albany, is a salient example of the lowest common denominator approach. However, such expediency-based solutions to complex problems will not suffice.

There is much concern among the general public, state officials, parents of students, and students themselves that something is wrong with higher education. They ask why college costs so much and what the benefits of study are. Some even suggest that colleges seem to know the cost of everything and the value of nothing, for few if any institutions can convincingly demonstrate that their educational programs have important impacts on students. In fact, most institutions cannot provide accurate and meaningful information that goes beyond such simplistic measures as grade point averages. Graduate Record Examination

scores, and cost per credit hour. Higher education's public demands better. A major challenge, then, is to build evaluation models that, first of all, spell out various effectiveness measures and then relate cost data.

Undergraduate teaching institutions have a particularly great need to demonstrate results. Institutions classified in this group are the community colleges, independent junior colleges, small liberal arts colleges, state colleges, and nontraditional colleges. With the exception of the community colleges, all have faced severe fiscal difficulty in the late 1960's and early 1970's and sometimes reacted with a lowest common denominator approach. The undergraduate teaching institutions must learn to link educational assessments with meaningful cost data so they can plan in a way that will improve their educational programs, attract rather than lose students, and stop, slow down, or compensate for waning public support.

This paper describes the Program Effectiveness and Related Costs (PERC) framework being developed and implemented by the Office of Research and Evaluation at Empire State College of the State University of New York.¹ PERC takes seriously the problem of marrying effectiveness and cost efforts into a coherent, powerful, and integrated package.

A Model for Integration: Program Effectiveness and Related Costs (PERC)

What the weaknesses in available studies lead us to propose is a program effectiveness and related costs strategy which focuses on the master question: What kinds of students working with what kinds of faculty in what kinds of learning programs change in what ways at what cost? The model looks like this:

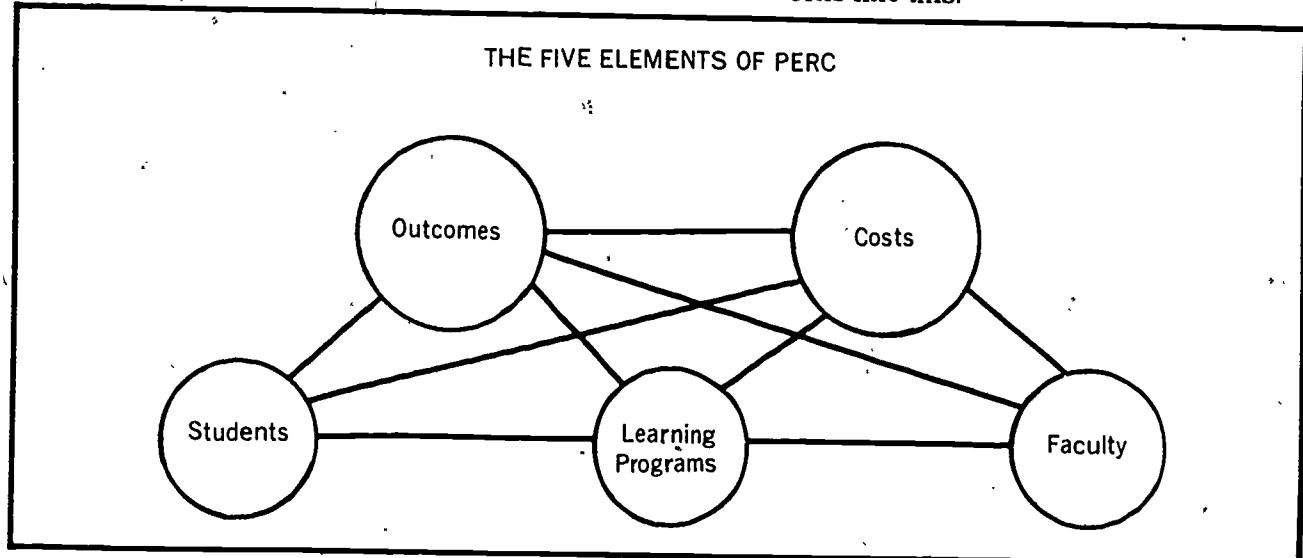


Figure 1

The first component of this model is **outcomes**. Each college must identify its own set of outcomes appropriate to the kinds of students it attracts, and the kind of educational program it offers. Colleges must specify what their students are trying to attain, what the college is trying to achieve, and what kinds of learning programs will produce these desired outcomes.

At ESC, we start by defining outcomes based on student needs and objectives. Each student designs an individualized degree program which provides the basis for measuring outcomes. The PERC model has classified individual student objectives into eight possible outcome categories: substantive knowledge, communication skills, cognitive, developmental, personal, occupational, public service, and unanticipated. To illustrate, substantive knowledge is the level of competence achieved within the context of a student's goals; cognitive outcomes include comprehension, analysis, evaluation, synthesis, and application; and developmental outcomes cover interpersonal competence, awareness, clarifying purposes, self-understanding, and self-consistency. We think this classification of outcomes is comprehensive and includes most key dimensions across different institutional types. However, individual institutions may select their own set of particular outcomes and measure them in ways suitable to their education program.

Turning to the cost area, there are two essential features of the PERC cost model. First, it is developed as a supplement to the effectiveness framework: cost data is developed after the educational effectiveness questions are identified. Second, the model is triggered by the individual student's learning experiences rather than by some budgetary formula (e.g., FTE students or credit hours). Group (class, major, etc.) costs are determined by summing the appropriate individual student costs. This provision allows allocation of costs accrued by a specific student and thus enables monitoring of costs caused by such things as use of different educational modes, area of study, and length of study. Most models work in the opposite direction.

Although ESC's cost model is comparable and compatible with most others (Debus, 1974), it also differs significantly from existing models. The model requires assigning a value for all in-kind contributions of services, materials, facilities, and

programs. Developmental costs and access costs, such as providing services to special groups not now served, are treated as deferred assets. Portions of faculty salaries devoted to general administration are assigned as overhead, not as direct instructional costs. Finally, average salaries are used across units of the institution.

The first step in the costing process is to take a student's file and to extract several pertinent items of information: learning center/unit (location), contract (course) number, amount of credit, dates, mentor (faculty member), area of study, and type of learning resources used (tutors, classes, independent study courses, field studies). With the location information in hand, the next step is to extract cost center figures. Cost data, which will be fixed for each location, is based on average faculty salary and fringe benefits assigned to the location, center overhead, general institutional overhead, auxiliary enterprises, debt service, capital outlay, and endowment costs. These costs will be broken down into contract month costs (the basic time unit at ESC). The "fixed" (contract month) charge will be assigned student contracts on the basis of the number of contract months taken. The specific costs (actual and "in kind") of the learning resources used will be added to the fixed charge. Step three is to accumulate these costs for each contract to determine the student's total program costs. In most instances above, "course" can be substituted for "contract" to get a sense of how these types of analyses can be applied elsewhere.

Summary figures for the cost model can be based on a student week as well as other bases. An FTE student week equals one traditional student credit hour. This conversion factor assumes that a full-time student at a traditional college studies 15 weeks, carrying 15 hours per week to earn 15 student credit hours. Using it, interinstitutional cost comparisons can be made.

In the PERC model, the outcome/cost relationship is the primary focus of attention. In addition, there are three other components of the model: students, learning programs, and faculty. A classification scheme has been developed for each of these components and is discussed in detail in the *Handbook* (Palola, et al, 1975). This data is used to help specify and elaborate the primary outcome/cost relationship.

Research Design and Instruments

The longitudinal PERC design (Figure 2) calls for a variety of survey and case study techniques in concert throughout the study. This provides the necessary multiple measures at each stage to create **chains of evidence** on where a college or program is having effects and where not (Campbell & Fiske, 1959; Sieber, 1973).

Initial measures are taken upon student entrance. At this time, a Student Biographical Inventory (SBI) is administered to a large group. The SBI provides a clear picture of the characteristics of incoming students, their learning styles, and goals. In a scheme defining effectiveness as goal attainment, the SBI is vital. The Educational Testing Service (ETS) Undergraduate Program Area Tests, or some comparable tests, are used to provide an objective² picture of student intellectual attainment. These instruments are supplemented by qualitative case study techniques: student interviews plus student and faculty rating forms. The interviews allow thorough discussion of complicated responses while the rating forms further delve into where entering students are on important cognitive dimensions (ability to analyze, synthesize, and apply learning to other settings) and areas of personal development (purpose, awareness, and self-understanding). The rating forms can be adapted fairly easily to most institutions' goals and objectives for students.

During their studies, it is useful to look again at students to see what changes are occurring and why. Much research on students in college (Newcomb, 1943; Katz, 1968; Feldman & Newcomb, 1969; Hartnett, 1974) indicates that the greatest changes often occur early. The Empire strategy identifies such change as close as possible to where it occurs through administration of a Student Experience Questionnaire (SEQ). This instrument examines whether students have changed their educational objectives, how they are reacting to the educational program, what the nature of their degree program is, and what kinds of learning resources they are finding useful. This questionnaire is again supplemented by student and faculty interviews as well as content analysis of student documents, a technique for objectively analyzing papers, journals, and the like (Berelson, 1954; Holsti, 1968). At Empire, when used over a period of time, this method will help especially in identifying student growth in cognitive skills. Rating forms also will be used again at this stage to identify change. In addition, plans call for administration of an Attrition Questionnaire (AQ) and a Mentor (faculty) Questionnaire (MQ). The former investigates possible positive or negative effects of study for dropouts while the latter recognizes the importance of faculty goal attainment to long-term program effectiveness and explores such things as backgrounds, motivations, views of the program, work load questions, participation in

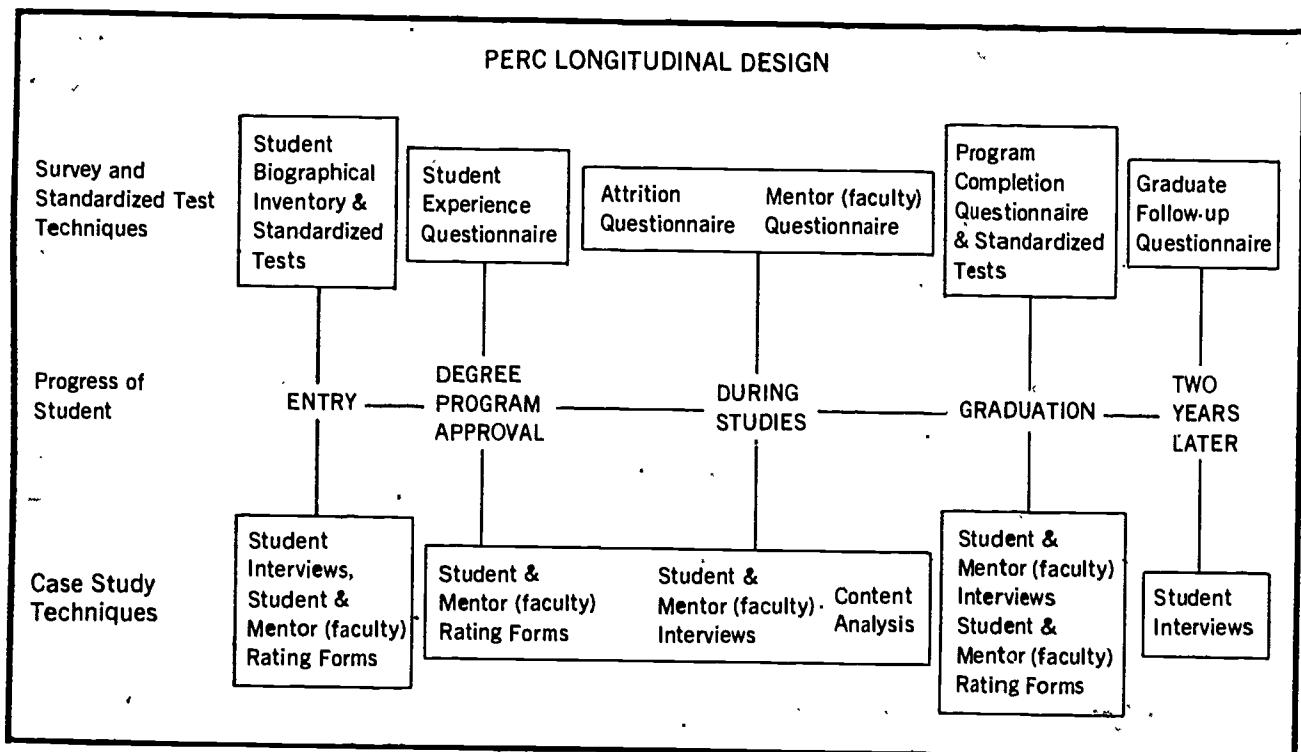


Figure 2

governance career orientation, and perceived outcomes for faculty.

At graduation, a Program Completion Questionnaire (PCQ) which mirrors the SBI is administered to see if students think their goals were achieved and why. Another round of standardized tests, the ETS Undergraduate Program Aptitude and Field Tests or some comparable tests, confirm or deny these perceptions in intellectual areas while rating forms and interviews with students and faculty again provide substantiating links in the chain of evidence.

Two or so years after graduation, a Graduate Follow-Up Questionnaire (GFQ) examines various academic, vocational, personal, and public services outcomes of the program. It also asks if perceptions of the program have changed and how. A few interviews will also supplement the survey findings at this stage.

While space concerns preclude full description of all instruments, here are descriptions of two that can be adapted fairly easily to any institution.³ The Student Biographical Inventory (SBI) was designed after examining several other instruments, the best known being the American Council on Education Student Information Form. The SBI establishes baseline data on students in several areas important to the PERC scheme: demographic background, socio-economic background, educational background, personal and financial supports, learning styles plus general and specific vocational and academic goals. The SBI is currently administered to all incoming students and assists the institution in meeting state and federal reporting requirements as well as providing most of the data needed to select PERC samples.

The faculty and student rating forms provide essentially qualitative data that can also be quantified. Perhaps the most flexible of all PERC instruments, they can be used at several points in a student's program or simply at the end by asking the student or faculty member to indicate where a given person was upon entrance, and where at subsequent points. The rating forms are easily adapted to any setting simply by substituting local goals for Empire's and creating brief hierarchical statements. For example, if a given goal is "to improve student's ability to communicate through writing," a ladder of descriptive statements on a faculty rating form might be: (1) this student frequently has difficulty making his/her ideas clear to a reader, (2) this student sometimes has difficulty making his/her ideas clear to a reader, (3) this student usually communicates his/her ideas clearly to a reader, (4) this student almost always communicates his/her ideas clearly to a reader.

Such statements can be created for any given set of institutional or program goals.

In sum, the research design calls for survey instruments reinforced by case study techniques. This strategy provides **chains of evidence** to link up student learning and change with the educational program and its related costs. Such a strategy overcomes a major defect of previous studies, since college specific effects are sorted out from non-college general effects.

Sampling

There is no one right sample design for all research. There are, however, simple and effective designs for a given set of problems such as those created by the PERC framework. The key to identifying an appropriate sampling strategy is to think through the entire planned study from inception to analysis and use. This may save much extraneous effort, for the sampling design should reflect the research questions to be answered. For example, if the basic aim is to find out whether a given department is measuring up in relationship to the rest of the institution, a stratified sample that draws equal or proportionate numbers of students from several departments may be appropriate. If, however, the aim is to look at the institution as a whole, a simple random sample or systematic random sample (e.g., pick every fifth person on a list) should suffice. Another possibility in this case is to cluster (e.g., study everyone in a given dorm), but this technique generally requires substantial cross-checking to ensure against unintended systematic exclusion of important groups whose inclusion might alter the findings. Again, pick the method that accomplishes the task of providing representation of a population with the least amount of effort.

The size of the sample also depends upon the questions to be answered and the analysis plan. If one wishes to study the perceived outcomes of married female and male students majoring in elementary education, health sciences, and business to see which program is having the greatest effects on which kinds of students, it is important to know before sampling what the size requirements of the statistical test of significance chosen are. A total sample size of 50 would not be sufficient to deal with such a complex research problem, although 100, if stratified to focus on the key variables, would be enough for many statistical tests.

The PERC design is longitudinal (i.e., we follow the same group of students over time) which helps define certain requirements of the sampling strategy. Also, using a variety of instruments necessitates sub-sampling strategies. In general, PERC requires a large enough sample of students

and faculty so that: (a) they are representative of important features of the population (e.g., sex ratio, full or part-time status, areas of study); (b) there is adequate allowance for attrition over time; and (c) the requirements of multivariate statistical techniques can be met. Figure 3 describes the PERC sampling strategy that meets these conditions.

The Student Biographical Inventory (SBI), which is administered to all incoming Empire students, provides the 500-person base for sampling. Since we have decided to test some hypotheses regarding student typologies that can be identified in the SBI, the sample will be selected so that the 500 are stratified equally into each student type. The 10 per cent, 50 person sub-sample who will take standardized tests and be studied intensively through case study techniques will also contain equal numbers from each type. Other institutions may wish to stratify samples differently (e.g., by areas of study) or use random sampling techniques.

During studies we expect there will be some attrition. The Attrition Questionnaire (AQ) will go to all dropouts from the sample. In addition, we will interview any dropouts who were originally selected for case study analysis. The remaining students from the original main sample (450 estimated) will receive the Student Experience Questionnaire (SEQ) when they register their individualized degree program. At that time, the case study respondents will also be again queried. Other institutions will undoubtedly use a different mid-stream point, such as the sophomore year, at which to "drop anchor." The graduation and post-graduate sampling will follow similar lines, although only 10 interviews are planned for alumni.

There are control groups at each stage of the longitudinal design. At entrance, since all incoming students receive the SBI, certain variables in the sample will be matched against the entire entering student group. For example, we will ensure

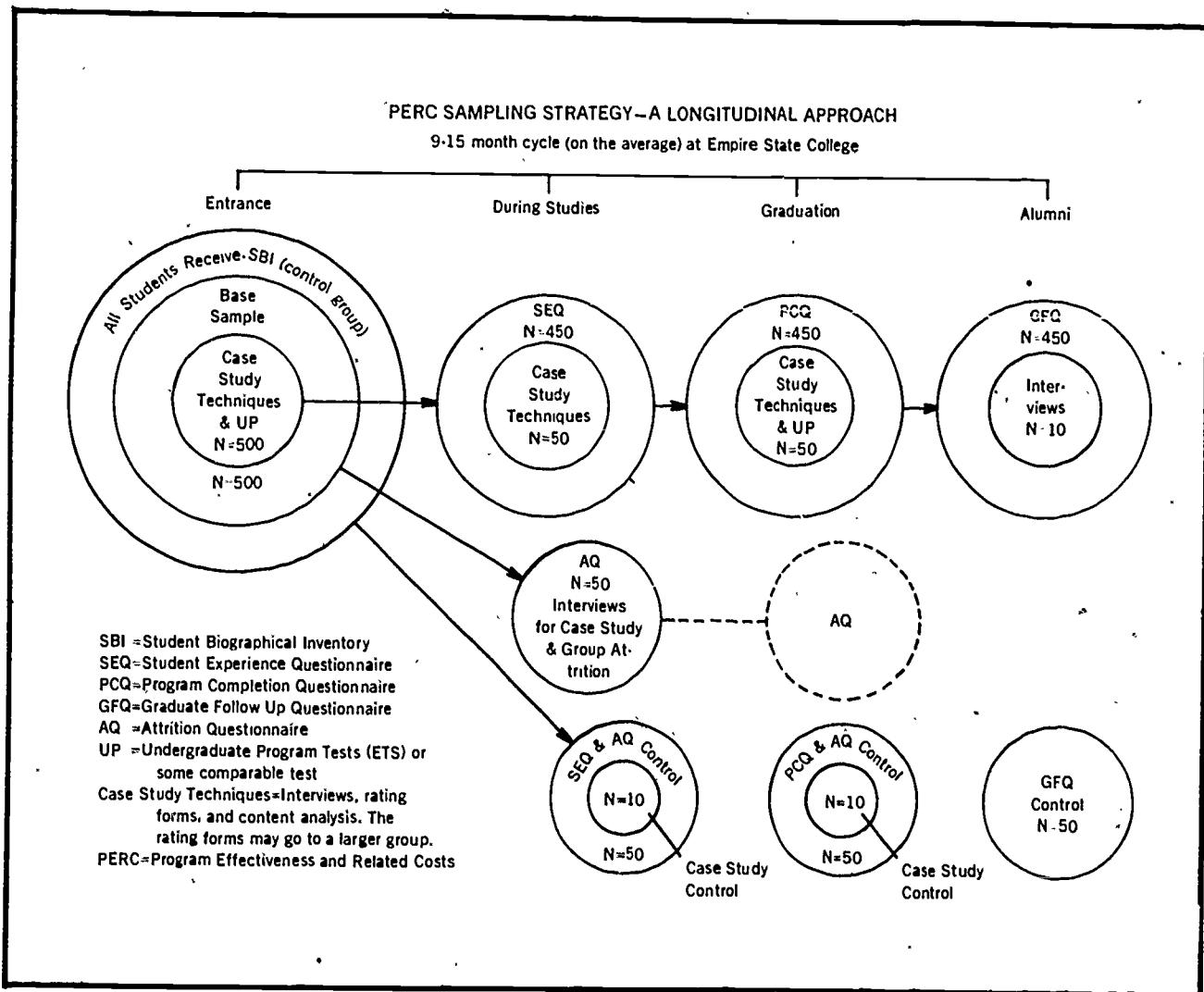


Figure 3

that the sample has the same proportions of female, minority, over 50, married, and low socioeconomic students as does the population. This will reduce the likelihood of systematic error. At successive stages, modest-sized groups will be selected at random from the student body to allow comparison with the sub-samples.

The Mentor (faculty) Questionnaire, not shown on the longitudinal design diagram, is administered annually to all faculty at Empire. This allows a variety of analyses on the faculty rating forms as well as providing much other useful data.

While there are many more complicated sampling strategies that could be employed, the above fits the needs of PERC. To use the simplest appropriate methods should be a primary goal for all research.

Illustrative Data Analysis

To illustrate the kind of data analysis that can be made from the PERC model, an example drawn from a 1974-75 pilot study at ESC is shown in Figure 3. The pilot meets the minimum conditions of the model with one exception: it is cross-sectional, not longitudinal.

Fifty recent graduates representing three degree programs in the College were the focus of this study. The degree program areas chosen from the curriculum represent a humanities field, a social science field, and a professional area. All graduates were asked to rate themselves on a nine-point scale for each of eight outcomes at the time of entry to the College and at the time of graduation, which allowed computation of mean scores for ratings at entry and at graduation. Also, the score differences (outcome change) were calculated for each rating dimension and for all dimensions combined across the three degree program areas.

Average experience costs refer to those costs incurred by the College for each graduate during the course of studies. The appropriate mentor and tutor costs for each learning contract⁴ were assigned to a given graduate, then aggregated by degree program area and averaged. Figure 4 presents the data on both outcome change and related costs for these graduates.

We expected to find outcome and cost differences among graduates in various degree program areas. This happened. Graduates in the social science area reported the greatest outcome change and also had the highest average cost while the humanities graduates reported the least change and the lowest cost. Outcome changes among graduates by degree program area were statistically significant.

In order to explain the apparent differences in outcomes and related costs (Figure 4), we analyzed further some differences among graduates in various degree programs. What the data (Figure 5) tells us is that the humanities graduates entered the college with self-ratings considerably higher than the graduates in the other two groups. The humanities graduates perceived themselves to be substantially stronger in the outcome competencies rated and therefore did not have as much possibility for "growth" on a nine-point scale. In contrast, the social science area graduates gave themselves the lowest competency ratings at entry but perceived that they had experienced major learning gains while enrolled at the College.

The cost differences among the three program areas were related to variations in length of contract experience and the amount of external tutor support used (Figure 6). For example, social science graduates on the average attended the College almost one full month (or the equivalent of four

GRADUATES' MEAN OUTCOME CHANGE AND AVERAGE EXPERIENCE COST BY DEGREE PROGRAM AREA

Degree Program Area	N	Mean Outcome Change**	Average Experience Cost
a social science area	13	2.95	\$1,336
a professional area	16	2.12	\$1,208
a humanities area	12	1.18	\$1,105
Total	41*	2.10	\$1,219

*Nine graduates did not complete rating forms out of the original fifty.

**F = 5.28; d.f. = 40; p = .01.

Figure 4

GRADUATES' MEAN SCORES AT ENTRY AND GRADUATION BY DEGREE PROGRAM AREA

Degree Program Area	Mean at Entry	Mean at Graduation	Mean Difference
a humanities area	6.7	7.9	1.2
a professional area	5.4	7.5	2.1
a social science area	5.0	8.0	3.0

Figure 5

GRADUATES' CONTRACT EXPERIENCE AND AVERAGE TUTOR COSTS BY DEGREE PROGRAM AREA

Degree Program Area	N	Average Months of Contract Experience	Average Tutor Cost
a social science area	13	7.58	\$69.23
a professional area	16	6.75	\$81.40
a humanities area	12	6.21	\$49.16
Total	41	6.85	\$68.11

Figure 6

credit hours) longer than the other two groups. Furthermore, these graduates show modestly higher average tutor costs, but strikingly higher than the humanities area costs and substantially lower than the costs related to a professional area.

The significance of the data presented in these three illustrative tables is that by linking costs to outcome change, it is possible to take a variable like degree program area and specify the initial outcome/cost relationship (Figure 4). Thus social science graduates experienced greater outcome change while at the college because they held a lower self-rating on the outcome indicators at time of entry, stayed in the college longer, and used more tutors on the average than other graduates. When this kind of information is linked to similar ratings on the same set of outcomes made by each graduate's mentor and tutor(s), plus a content analysis of contract work completed, a comprehensive picture of college impact is provided (See the full report of this effort in *perc - A Pilot Study*, 1975).

The academic and fiscal implications of the above data analysis are also apparent. Although students may vary considerably in competencies as they enter different degree programs, under conditions of contract learning, the longer they

stay and the more tutorial resources used in contract work, the greater the perceived outcome change. This greater change also generates higher costs.

Policies concerning faculty work load, admissions criteria, appropriate student body mix (by degree program area), and financial costs to the Empire student may be affected by this finding if the college decides to maximize change for all types of students. The data suggests that requiring eight months minimal residence in the college instead of the current six-month period will produce greater outcome change as well as greater costs to both the student and the college. There are major educational and budgetary ramifications if this initial finding holds up in the full PERC study.

Strategies for Data Dissemination and Use

If PERC data are meant to aid critical self-examination and improve the teaching-learning process, the risk of dissemination and application becomes as complex and time consuming as data generation and analysis. Far too often research agencies and college resources are spent in the collection of data, assuming that campus decision-makers are eagerly awaiting the results and will

put data to immediate use. However, substantial experience tells us that mere reporting of data will not lead to its use unless the data confirm the user's beliefs (Havelock, 1970; Rodgers and Shoemaker, 1971; Pajola, et. al., 1974; and Lindquist, 1975). The *Handbook*, discussed at the conclusion of this chapter, contains a thorough discussion of nine strategies for data dissemination and use. Only two strategies are presented.

Involve Users Throughout the Research and Dissemination Process

Our experience and that of others suggests that campus groups do not automatically respond favorably to PERC questions, data analysis, research reports, and policy recommendations developed. However, direct personal involvement enhances a sense of ownership, stimulates credibility, and fosters interest in important campus issues. One technique that has proven effective is establishment of a research advisory committee composed of faculty, students, and administrators who are interested in research. A double bonus is gained if such people also are highly respected by their peers. This Research Advisory Committee (RAC) at Empire State College has sharpened research questions, reviewed research designs for various studies, commented on appropriate methodologies, and critiqued research reports. In addition, RAC assists in implementing recommendations and policy changes that flow out of PERC.

A second technique is for the research staff to regularly visit various academic, administrative, and student units on a campus to share ideas and common problems, and to listen to suggestions. A similar idea is to hold workshops to study the data further, pursue new problems suggested by the data, or plan for implementing policies based upon PERC information.

We also recommend that students should participate throughout the process. Students are most directly involved in the educational program, in large part the source of data, and greatly affected by policy changes that result from such studies. They provide a freshness and honesty to the research process that keeps others from skirting sometimes sensitive substantive problems.

Seek Small, Cross-Group Interactions

Communication research indicates that only persons ready to agree with the message are likely to be persuaded by formal communications—research reports and presentations, (Hovland, et. al., 1953). Others need personal interaction with researchers and opinion leaders. However, large faculty meetings or meetings of only one reference group (e.g., all administrators) are likely to result

only in confirmation of the views of major speakers or in attacks (e.g., lousy sample, biased questions, irrelevant points). Thus, we suggest trained leaders to help small groups with mixed membership—students, social scientists, humanists, administrators, liberals, conservatives—work through the data. Another strategy is small groups identifying major college strengths and weaknesses suggested by the data and then reporting their findings to the general group. Using small groups increases the possibility that all parties will contribute and often lends a sense of validity when various strengths and weaknesses are independently identified by several groups.

Final Observations

We have presented an overview and brief discussion of ESC's PERC model. For colleges and universities who take the question of evaluation seriously and who want to build relationships between program effectiveness and related costs, certain minimum tasks must be completed. They include:

1. The relationship between **outcomes** and **costs** is the primary focus of the evaluation. One should trace out what happens to students (intellectually and personally) while attending the institution and how much money was spent from all sources in various programs to achieve results. By doing this, one can learn what it costs to achieve different outcomes, and use this information in improving the learning process, program evaluation, budgeting, and long-range planning.
2. The evaluation study produces **value-added** information about students, including pre- and post-measures on the same subjects. That is, it obtains data (formally and informally, hard and soft, quantitative and qualitative) on specified intellectual and personal attributes of students at entry and completion of their programs. The key question here is: How much have students moved or changed in specified characteristics while participating in the institution's program?
3. Data about student change and development is collected from at least **two sources**, the student him/herself and his/her faculty mentor. This ensures multiple perspectives in cost-effectiveness evaluation.
4. **Two types of measurement**, quantitative and qualitative, should be used to study and evaluate student change and development. Over-reliance on quantitative measures often overlooks rich and sometimes subtle information about students. Further, qualitative

information, particularly case studies, generates continuous data necessary to sort out where **impact** on students occurred in the program. While no one measure is adequate, multiple measures create **chains of evidence** on effectiveness.

5. Data are evaluated and interpreted from two points of view, ideally one inside and one outside the program. This step moves reports on "outcomes" to measures of "effectiveness." i.e., "standards," "quality indicators," or "indices of success" are applied to judge the value or desirability, even the acceptability of observed student outcomes.

What does this model mean to you and your

college? In all likelihood, it means a major rethinking of institutional priorities and adopting new ways of allocating scarce resources. Research and evaluation must become a high priority function and supported with appropriate funds and staff. This does not mean creating another institutional research office which collects traditional information about space, FTE costs, grade point averages, faculty load, and the like. For current internal decision-making use, traditional IR data is absolutely necessary. As we have argued in this chapter, that kind of data is not sufficient to answer vital questions about student growth and program evaluation nor the linkage between these outcomes and related costs. The PERC model provides this information and strategies by which it can be used.

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NOTES

- 1 This paper reports on research from a project, "Developing Cost-Effectiveness Models for Post-Secondary Education," partially funded by the HEW Fund for the Improvement of Post-Secondary Education. Ernest G. Palola is project director.
2. The authors are well aware of the concerns of many over use of standardized tests to measure academic achievement or level. In fact, we share them. But, in concert with other methods, standardized tests do give a view of student intellectual attainment which can be compared to national norms. Thus, they are useful as one of multiple measures.
3. The student biographical inventory and the Student Self Rating Forms used in this study are available directly from the authors.
4. Empire State College uses learning contracts in place of traditional instruction methods. Other institutions may wish to substitute "course" costs at this point.



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Lifelong Learning Investigations: A Report from Two States

**Norman Kurland
New York State Education Department**

Let me give you an indication of the setting in which our Study of Adult Education takes place, because unless you have lived in New York, you may not be aware of the unique character of the institution called "The University of the State of New York." It is the state education department, plus. It is the agency which is under the New York State Board of Regents. The University of the State of New York encompasses all of the educational activities in the state of New York, everything from pre-kindergarten programs to graduate schools, public and private. It includes oversight of proprietary institutions; the state libraries and museums are under its jurisdiction; the licensing of all the professions except the legal profession is under the jurisdiction of the Board of Regents. Responsibility for public television, including some financing of the television network in the state, also is within the purview of the Board of Regents.

The University of the State of New York has all the elements that would go in making up an open learning system. The problem is that all of these various components are not very well-connected to provide a comprehensive service to support the learning needs of adults, and there is not universal recognition that their needs are an important, if not central, function of the University of the State of New York. However I would say, on the basis of our examination to date, that by the end of this century the Regents of the University of the State of New York will probably give most of their attention to learning needs of adults, rather than to learning needs of children and youth as they do now.

We have a framework within which it is possible to do a lot of things that people are talking about doing in the various reports and studies.

About a year ago Commissioner Nyquist decided it would be useful to take a look at the future learning needs of adults, partly because he sensed a growing interest in this area on the part of higher education institutions and schools; partly because he sensed the growing need of adults for learning opportunities; and partly because he wanted to keep the department looking forward to what ought to be done to meet these needs, as he had done from the beginning of his administration. As one of his first acts as Commissioner, he had called for the establishment of the external degree program. That program, as John Valley indicated, is now going. We have been providing an estimated 4,000 degrees through the external degree program, so we already have in place a component of an open learning system that provides for the needs at least of a portion of the adult population.

I had come to the Department in 1961 to set up the College Proficiency Examinations, a precursor of the External Degree Program, but had not been involved with the learning needs of adults recently. It seemed, therefore, like an appropriate assignment for me to undertake the study.

We also decided that, at least initially, we would not do a large-scale study. One reason was that the department had a large number of studies done in recent years, some of them resulting in thick volumes recommending all kinds of things to be undertaken in the state but with very little having been done.

It's like the story you may have heard about the way things happen here in Albany and in Sacramento and other places where studies get done. We get a staff report an inch thick. The Director reads it and says, "Gee, that's great but we've got to get that shortened to 20 pages so we can take it to the committee chairman."

The committee chairman says, "That's a wonderful report, wonderful idea; let's take that to our full committee, but it's got to be down to two pages." So the staff gets it down to a two-page document and they take that into the committee.

The committee says, "That's wonderful, that's a great recommendation! Let's take it to the legislature."

So, they take it to a legislative subcommittee which says, "That's fine, but let's get that into a paragraph that we can present to the whole committee."

The committee says, "That's great, let's put that into a law. Let's get a word in there that will really emphasize that we want that kind of activity."

So the law goes up on the floor and some legislator gets up and says, "I don't like that word. Strike it." So it is struck and that's the end of the study!

We didn't want our study to end up with that kind of result. We said that we're not going to produce a thick report which may or may not even end up on the shelves. Furthermore, once we got into the study, we found that lots of people were already doing studies that were quite applicable to New York State. George Nolfi had done the Massachusetts study. We read that and felt that one could strike out "Massachusetts" and write in "New York," and most of what Mr. Nolfi had said about Massachusetts applied in New York State. The same observation applies to the California study. In addition, there were on-going studies supported with Higher Education Act Title I funds being done regionally in New York State, and those were giving us a lot of data about needs, providers, barriers, etc. We thought there was no need to duplicate that. Furthermore, every study that we have read essentially reinforces the fact that our situation is not all that different from those elsewhere. So, I think our decision was right not to undertake detailed research studies or generate new data, but rather to look at the data, look at what's around to see what needs to be done and, most important, see what needs to be done in order to make the recommendations happen.

A lot of recommendations are on the books. In fact, one of the early things that was brought to my attention was a study that had been done for the Board of Regents in 1938: *An Inquiry on Adult Education in New York State*. I could reproduce that study today and you would almost think it was done recently. In fact, a year ago I was saying that the only change I had to make would be to take out references to WPA. Of course, since then we've had the development of Public Service Employment, so I'd have to change WPA to Public Service Employment

in order for you not know that that document had not been made today. It even talks about the need for women's education and consumer education.

More recently I found that there is a law on the books in New York State to promote wider extension of opportunities for education. Its purpose is "to provide for, promote, more widely extend to, and bring within the reach of the people at large, adults as well as youth, opportunities and facilities for education." That law was passed in 1891.

So there is a certain recurrence of concerns for providing more adequate access to opportunities for education throughout life. Some of the discussions and rationale around that 1891 act are amazingly similar to discussions that go on now, including high sensitivity to the concerns of the universities, that if they set up the extension system the universities would lose students. So they very carefully said, "Don't worry. People will get more interested in education as a result of this extension system, and therefore you will really gain rather than lose students."

The technology they were using at that time was the best available then, sending out itinerant professors. That law has remained on the books, has been modified, and is the basis for our authorization to be involved with educational media, particularly television. So even the things we are talking about here in this conference about the relationship between media, open learning, access, etc., have a historical background in the concerns that people had back in the end of the 19th century.

We found also that studies done in other countries had striking relevance for what we're doing in New York State. The Russell Report on adult education in England and Wales has strikingly parallel findings to what we find in New York State, and I commend that report as a very excellent survey and analysis on adult learning needs in the United Kingdom.

Another study that we found very important to our thinking was the UNESCO Report, *Learning to Be*, which says very profound things about the lifelong learning needs of people in the world into which we are moving. There is a growing worldwide expression of concern and interest in the idea of promoting the concept of lifelong learning and providing more adequately for the needs of adults throughout their lives.

As we looked at what was actually being done in New York State, we were very much struck by the extent to which the various kinds of needs of adults were already being responded to. It wasn't as though we didn't have any lifelong learning opportunities in the state; however, we didn't have

them in a "system" as such. In fact, one of the conclusions that we're coming to is that what we do not want to achieve is a **system** of adult education or lifelong learning in New York State. What we want is what John Wilcox has called "a frail web of services" to support the diverse learning needs of a very diverse population. For the adult population is even more diverse than the traditional school-age population. Adults have a wide range of needs, and are more diverse in their expectations, requirements, learning styles, life styles, etc., than the youth population. Therefore, no single system will provide adequately for the needs of all adults. What we need is arrangements, or as the Russell Report calls it, "services in support of adult learning."

We found that a lot of those services now exist in New York State. There's no subject that someone isn't teaching to someone in New York State at the present time. The problem is it isn't available to even to everybody who might be able to have access to it. So one of the early things came out of our studies is that there is a need for better information about what is now being provided in the state. We are now working out a way to provide information on what kinds of learning opportunities are available and to develop a system that can be kept current. One of the problems with the information systems that we now have is that they are generally done on a one-shot basis. We have a number of catalogues that were done with Higher Education Act Title I Fund. They are pretty good, but there was no design built in for keeping them current and improving on the basis of experience with them. So we are looking at ways to provide that as a state service.

We found also a need for counseling services. We have taken a look at what is now being provided and what might be provided; we have done two papers on counseling services: one which laid out the issues and one which makes some recommendations about directions that we might go in providing more adequate advisory or counseling services for adults.

We came to the conclusion that there is a changing orientation on the way in which people are looking at adult learning or lifelong learning. Traditionally in the way that much of our adult offerings in New York State are set up, the orientation has been toward the idea that education is primarily an activity for youth; education that is provided for adults is provided in a way to make up for things that people may have missed when they were younger or as a continuation of things they might have done when they were young. So almost all of the formal education for adults is provided by institutions whose primary mission is to provide for the education of youth. What seems to be

emerging, and what we think will be more and more the case in the future, is institutions whose primary mission will be to provide for the learning needs of adults.

Probably most of the actual learning activities of adults goes on in institutions whose primary concern is **not** the education of adults. Education in industry is very extensive, but it is done by an institution whose primary mission is not education but something else. On the other hand, we have institutions whose primary mission is education, but not education of adults. What we think will probably emerge more and more in the future is institutions whose primary mission is the education of adults. This may already be happening. For example, it has come as a considerable surprise to our state university to find that it is already serving a large adult population. Last year, for the first time, (this shows you the youth bias of our system) SUNY asked the age of its students. It was found that 40 per cent of the students are over the traditional age of 23. So they are not really serving only a youth population, though many of their practices and much of what their rhetoric is still addressed to the idea that education at the collegiate level is for young people, 18-22, who finish their education, and then go on to work.

We see, too, emerging a changing pattern in the relationship between education and work, more of a merging of the two, with people moving much more freely between work in the traditional sense and education in the traditional sense. We think that one of the things that is going to happen is a merger of the two, so that there will be a redefinition of work which will include education as a part of what one legitimately does to justify one's earnings. There is going to be a real need to examine

what are appropriate roles for adults. Work in the traditional sense is not going to be fully self fulfilling or available in sufficient quantity for everybody, but education is, and there seems to be a growing interest in a re-definition of education to relate it more closely to our concept of what is a legitimate activity for an adult. One of the things this conference can do is promote wider acceptance in the community at large that learning by adults is a legitimate and appropriate adult activity. We need this because, in a sense; many people tend to think of adult education as something for others, not something one does to make up for deficiencies in earlier education. So we need to develop an acceptance in our society of the idea that learning and involvement in education is a legitimate adult activity. And we need to see that it is appropriately supported by public funds.

The final area we have been exploring is the question of cost. Every survey of nonparticipants turns up cost as one of the reasons people don't participate. We have been looking at ways that this barrier might be overcome, so that we might achieve for people of all ages equality of educational opportunity. We have been exploring the concept of "a lifelong entitlement" that would enable all individuals access to public support for some portion of their education at any point of their lives when they feel it is appropriate for them to take it.¹ There has been a great deal of interest in this concept. We hope that papers we and others have done will become widely available and be widely discussed. Perhaps in the next five or 10 years, the concept that support of adult learning is an appropriate public concern will be accepted. We hope that we will have, in some form, legislation that will provide resources to provide the kind of education that we have been talking about in this conference.

NOTES

¹ A short version of one approach follows

The main provisions of the bill are:

1. Every adult American would receive an annual Educational Entitlement (EE) which in the first year of the program would be worth (\$200).²
2. The EE will begin (3) years after last enrollment as a regular high school or college student.
3. The EE could be used for any of a broad range of educational activities including counseling, tuition, purchase of educational materials, support while studying, contributions to educational and cultural agencies, and other activities specified in the bill.
4. Unused EE would remain available throughout the individual's life and would earn interest at a rate specified in the bill.
5. When an individual has used all of his EE, he can draw upon his future EE for some period (5-10 years).

6. The Congress shall annually appropriate funds or provide a special tax to pay for the EE.
7. The states will determine which organizations shall be eligible to receive EE funds under guidelines to be set by the Secretary of HEW. The states will similarly have responsibility for monitoring the performance of providers.
8. EE will be treated as taxable income in the year used.
9. Funds are authorized to enable each State to establish a system of information and counseling ser-

vices to insure that persons wishing to use their EE know what educational alternatives are available to them and to insure that they have help, if needed, in planning their education. Included are provisions to insure maximum utilization of existing services.

2. Note that no bill has yet been drawn.
3. Numbers placed in parentheses indicate that they are subject to change.

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Lifelong Learning Investigations: A Report from Two States

**Richard Peterson
Educational Testing Service**

Norman Kurland of New York State Education Department and I have taken quite different approaches in our studies of statewide programs for lifelong learning. Whereas Norm will tell you that he works pretty much by himself, or with one able assistant, in the California project we've had a group of people, each one knowledgeable about a different aspect of alternative post-secondary education services. There are pros and cons, needless to say, in trying to run an operation involving eight or ten experts.

Our study stems from a recommendation in the 1973 report from the Joint Committee on the Master Plan for Higher Education of the state legislature. It was a long report with many recommendations, one of which was that there should be a fourth public segment of California post-secondary education "to offer education programs, coordinate existing external and nontraditional programs, assess learning experiences, maintain a credit

bank, and award certificates and degrees." Following this recommendation, the legislature directed the joint committee to contract with a private consulting firm to analyze needs and propose alternative approaches to implementing an external higher education program.

In addition to the proposal I submitted, the legislative staff involved also liked elements of several other proposals. So we put together a team of people, all interested in statewide nontraditional programs, and most working in the Berkeley area. Some in the group will be familiar to you: for example, Bud Hodgkinson and Bill Shear, who are concentrating on non-instructional services; a couple fellows from Stanford—Richard Clark (who has since gone to Syracuse) and David Ruben—who are doing a background report on possible uses of the new media; John Shea, an economist at the Center for Research and Development in Higher Education; J. B. Hefferlin, an editor at Jossey-Bass Publishers; and Pat Cross and Pam Roelfs from our office in Berkeley.

In addition to the main feasibility study of which I am the nominal head, there is a separately funded study, conducted by Marcia Salner, of existing resources for post-secondary education in the state. Our final report will include a summary of the inventory of resources, which will be lined up against our own analysis of needs from a statement of the unmet needs. This, then, is some of the background of the project.

I will go on now to describe (1) the unmet needs that we have identified, (2) the assumptions we have developed that would underlie the planning and operation of the new services, (3) four alternative organizational models, and (4) what we expect may happen in the fall, winter, and spring, subsequent to release in September of our final report and the several supporting technical reports..

We spent the first five months after the study, which started last August, attempting to analyze needs for new post-secondary services in California. (The second half of the study has been devoted to thinking through models, developing recommendations, and preparing a final report.) The needs analysis took two approaches—and cost roughly equal amounts of money. We just developed a questionnaire covering adult education interests, preferred methods and places for learning, desired new services, perceived barriers to further learning, and so forth. We then contracted with a highly competent (and reputable) survey research firm in California to give the questionnaire to adults in a sample of 1,048 households in the state.

The second "half" of the needs analysis consisted of three- to four-day staff visits in each of seven diverse communities in California: a city in the Central Valley, an affluent suburb, a mountain town, a coastal town, a locality with many alternative life style people, a section of North Oakland (a heavily Black community), and a section of central Los Angeles with many immigrants from South and Central America. Our purpose was to talk directly with people in diverse circumstances (some 900 all told) about what they want to learn, what kind of learning method they prefer, what locations they prefer, and what sorts of difficulties they would encounter in pursuing further education. Meeting with small groups of "rank and file" people where they work or at community agencies, we asked them to fill out the same questionnaire that was administered statewide by the commercial firm.

We now have two needs reports. One is entitled *California's Need for Post-Secondary Alternatives*, based mainly on the poll, although the last chapter is essentially an essay on what life in California is apt to be like 20 to 30 years from now, and the other, entitled *Community Needs for Post-Secondary Alternatives*, is an account of what we learned in each of the seven communities. The second report is like a set of individual case studies that supplements and enriches the fairly dry statistically heavy first needs report.

Needs for Post-Secondary Alternatives

The unmet needs, as we identified them, break down in three categories: instructional needs, needs for various kinds of learning opportunities usually involving teaching in a more or less formal sense; non-instructional needs, needs for what are often termed support services to assist individuals to plan and eventually realize their learning aspirations; and institutional needs, needs that post-secondary and other educational and human service organizations have experienced which, if met, could contribute to more effective performance of their respective missions.

The unmet needs, 14 in number, are as follows.

Instructional Needs

1. Accessible upper division and graduate programs. Chiefly from our visits to communities, it became clear that many people in the state are so distant from existing four-year colleges and universities that it is virtually impossible for them to enroll in degree programs at the upper division and graduate level. (In California, as you know, the community college system is very well

developed, so the need here is mainly for more upper division and graduate external programs.)

2. Accommodation of part-time students in existing four-year institutions. Part-time students with whom we talked often reported not feeling entirely welcome, for such reasons as "unfair fee structures," "insulting" enrollment procedures, unsympathetic instructors, and, most often, lack of classes scheduled at times convenient for adults.
3. Special services for particular populations. Examples are women re-entering college, minority populations in California, handicapped people, and older persons.
4. Opportunities for occupational certification, retraining, upgrading and recertification. There is a complex set of issues involved here, with numerous interested parties.
5. Degree-oriented programs for individualized learning. Many people with whom we met during the community visits spoke of a need for learning programs leading to degrees that could be individually tailored in terms of their job requirements, family responsibilities, and other circumstances.

Non-Instructional Needs

6. Information about learning opportunities in the region. Both in the statewide poll and during the community visits, a great many people said they need information about learning opportunities in the local area. They know they want to learn something, but they don't know where to go. They want systematic information, for example, about time, place, and cost alternatives.
7. Counseling. When we talked to people in the seven communities, counseling was the second most often cited need (the desire for information was mentioned most often).
8. Assessment of personal competencies. A surprising 20 per cent, one in every five in the statewide sample, responded positively to two similar statements about (1) "assessment of personal competencies..." and (2) another item about "testing of strengths and weaknesses in various subjects or skills." While it's not clear what purposes people have in mind for wanting this assessment, the magnitude of response was impressive.

9. Evaluation of non-college experiences. One in ten respondents in the statewide poll reported interest in "evaluation of non-college experiences...for possible credit toward a degree."

10. Unified transcript service. Again, approximately one in ten respondents indicated interest in a service for "putting together... a record of all my educational work..."

Institutional Needs

11. Continuous educational needs analysis. Educational planning decisions, like other decisions, require good information. A well conceived needs analysis service could assist institutions to plan regionally and statewide.
12. A post-secondary programs clearinghouse. Potential learners and people who work with them—counselors and advisors—need comprehensive guides to post-secondary offerings in their region. Program planners could also benefit, e.g., avoiding unnecessary duplication.
13. Manpower monitoring and projections. While it is not clear that an educational institution should be the responsible agency, it should be a cooperating party. The chief use of this service would be in vocational counseling.
14. A media clearinghouse and consulting service. There are presently many media-based instructional activities which, viewed together, are fragmented and uncoordinated. This service would seek to bring some rationality to these efforts.

These are the 14 needs as we have identified them. In our report we will propose a range of expanded and new services for meeting each of these needs, and recommend that the state, over a period of years, move to establish them.

Basic Assumptions

In thinking about how the new services should be planned and operated, we have articulated nine basic assumptions:

1. The ultimate purpose of the services is the self-actualization of individuals and, in consequence, the actualization of the society. The various services, singly or in combination, could assist individuals in developing fully their human potential. (Deliberate,

formal learning is but one facet of this development.)

2. All the services are available to all the adults in the state. The possible exception is the individualized learning program, for which a minimum age may be appropriate, as well as an assessment of general ability and capacity for self-directed study.
3. There is substantial state funding, so that the cost to users is generally low. Fees for most services are based in part on ability to pay. The general fee policy is age-neutral. (The charge to older people is the same as for college-age people.)
4. Services are designed to be highly flexible in their operation, to be responsive to the unique needs of individuals. Programs should also be capable of rapid change as the economic and social character of the localities change.
5. Services are organized at community, regional, and state levels. The bulk of the work, the direct contact with potential learners, takes place at community or neighborhood centers. Planning, coordination, and information processing occurs at regional offices, with broad policy set by the state level unit (board).
6. At all three levels—community, region, and state—there are close working relations with other educational, cultural, and industrial organizations. The goal is to facilitate individual development with as many public and private resources as may be desirable and appropriate.
7. Planning and operations are community-based to the greatest extent feasible. Citizen/consumer advisory groups participate in all planning stages and in various of the ongoing operations at all three organizational levels.
8. All units are to be housed in existing facilities — community centers, libraries, churches, schools, and the like. No new buildings are constructed.
9. All the activities are fully open to public scrutiny. Evaluation and accountability are institutionalized and regularized. Requests for any and all kinds of information about programs and operations are fully and promptly complied with.

Organizational Models

In our report we expect to outline four alternative models for organization and delivery of the

proposed new services:

1. A counseling and educational brokerage model. Information about educational resources in the region, together with career counseling, would be the heart of this set of services. There would also be services for appraisal of individual competencies, as well as "advocacy," in the sense of directly assisting a person to act upon his or her learning aspirations (help in getting enrolled somewhere, working through red tape, and so forth).
2. An individualized learning program. This model, as we are conceiving it, has much in common with Empire State College, Minnesota Metropolitan State College, and the University Without Walls. It involves content and learning method flexibility (a person can design his own program) and would use all available resources in the community. Students would obtain degree credit for prior learning, and their studies would be oriented around an academic plan and learning contracts.
3. A validation model. The third model, the validation model, would function much like Thomas A. Edison College in New Jersey and the New York Regents External Degree Program. It would provide a "documentation-of-life-experiences" service, award degree credit for prior learning, maintain a credit bank, and grant degrees.
4. A comprehensive adult learning services model. The comprehensive model is a combination of the three sets of services just described. Services could include: information about educational resources in the region, an informal learning exchange, referral to various assisting agencies, counseling, career planning, appraisal of personal competencies, advocacy; an individualized learning program; and documentation of life experiences, awarding of degree credit for prior learning, maintenance of a credit bank, and granting of degrees. In addition, it would operate the three services to institutions—regional post-secondary education needs analysis, regional post-secondary education programs clearinghouse, and a regional media clearinghouse and consulting service.

The Next Nine Months

Our final report, as well as the background technical reports, are scheduled for publication in September of 1975. We anticipate a series of hearings or "work conferences" around the state, pos-

sibly conducted by the California Post-Secondary Education Commission. Legislation will then be drafted, followed probably by yet another round of hearings, held by one or more committees of the legislature, on the draft bill. Final legislative action may be expected in June of 1976.

We recognize that the climate for immediate

governmental support of large new higher education programs is not highly propitious in California, as elsewhere. We are, nonetheless, hopeful that our recommendations will set off a dialogue in the state that over the next several years will result in post-secondary education coming to be regarded more nearly as lifelong education.

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Travis Linn is assistant to the chancellor of the Dallas Community College District. In that position he is responsible for the development and administration of telecourses offered by the community colleges in the Dallas area.

Community College Consortia for Open Learning

**Travis Linn
Dallas County Community College District**

I would like to give you a brief report about a specific consortium on a local basis between community college districts for the purpose of developing and offering telecourses. This is not, by any means, a detailed model, but we feel that it is a very practical one, one which grows of its own volition and which I believe is working well for its members.

If a consortium is a formal organization of institutions with a staff and written documents, then the Dallas County Community College District is not a member of a consortium. But, on the other hand, if a consortium is the existence of a cooperative arrangement between institutions for the development, production, or use of materials, then, indeed, we are in the business of consorting with others. I view the working definition of consortium as the cooperation between institutions for the purpose of sharing both the input and the cost of developing and producing materials and sharing the use of those materials.

Our purpose in having a consortium at the Dallas County Community College District is essentially economic in nature. We can have a better course if we can get others to share in the cost of making it. Others who may not have as much initial money might be unable to utilize a telecourse at all if they couldn't find someone who did have the money. These cooperative arrangements also enable one institution to take advantage of the experience and expertise which has been built up by another, often at considerable expense.

Briefly, let me tell you how this came about. In 1972, the Dallas County Community College District made a decision to develop a televised course in the field of American Government. Using local tax money, the course was developed by the district alone, without cooperation from anyone else. I think some initial feelers were put out for cooperation, but no one else had funds to spend on it. It was offered in the fall of 1972, and the spring of 1973. Partially because the course had been successful, the Tarrant County Junior College District, which includes Fort Worth, decided they would like to use the course as well. Tarrant had not contributed to the original cost on developing the course, so an arrangement was worked out with Texas Coordinating Board Approval in which Tarrant County would pay Dallas a portion of the state financial reimbursement it had received on a per-student basis, in exchange for the right to offer the course. And I stress, in this case, that the payment is not for the use of the program since the programs were already on television and were available to everyone. The payments are for the right to offer the course for credit as a Tarrant County course. During the summer of 1973 also, there were other junior college districts within the television station's coverage area which joined in the consortium under the same financial arrangement. At the same time the opportunity arose for the offering of the *Man and Environment* telecourse, with the production of 15 local programs to go along with 15 programs from Miami-Dade. In this case, Tarrant and Dallas joined together, sharing equally the cost of leasing Miami-Dade programs and the cost of producing the local programs. When the course was offered, there were no financial exchanges between Dallas and Tarrant County because they both equally owned the local version of *Man and Environment*. The other four community college districts which offered the *Man and Environment* course did make payments, and these payments were split equally between Dallas and Tarrant County, to help reimburse the cost of producing the local program.

We are now in the process of developing a second-half ecology course on the same basis. During 1973 and 1974, the Dallas County Community College District produced an English composition

course and a new course in American government, replacing the previous one. Tarrant did not participate financially in the development costs of the courses, so it makes payments to the Dallas District for their use at this time. However, since we in Dallas were quite confident from the beginning that Tarrant would be using the courses and would be a major user with substantial enrollment, Tarrant was invited to assign faculty members to the advisory committee which participated in the design and development of the courses. This would ensure for them that the courses would meet their needs when it became available, and it tended to ensure for us that they would use the courses. Since that time, the partnership between Tarrant and Dallas has continued to grow.

We now have an agreement which allows each district total freedom to make its own decisions, but still provides for coordination and cooperation. Among the features of this agreement are a sharing of information about which courses we are considering, both for development and for acquisition from other producers, so that neither of us goes off and gets something that the other doesn't know about. Our agreement also features an equal sharing of the lease costs for any course which is acquired from outside the area if both districts want to use it on a given semester basis. If we wish to use *Man and Environment* and Tarrant does not, we pay all the lease costs and next semester, if they wish to join in, we split the lease costs for that semester.

We also have a provision allowing an opportunity for either district to share in development costs of a planned course, thus avoiding later payments for use. However, later payments may be made for use of a course in which development costs were not shared. For example, we may go ahead and decide to make a course in earth science (which, indeed, we are). Tarrant may not wish to share in the cost of that (which they do not), and if they subsequently use it, they'll make payments to us for that use, as I described before. Other participating districts in this area have had considerably smaller enrollments. Most of them are serving rural communities. So they have not been involved in the development of courses. But I fully expect that, as time goes on, they will become more involved, and will send faculty members into the design teams for the courses.

What is happening here is quite obviously an incremental, step-by-step development, in keeping with the nature of the situation. It is based on practical considerations and is no more complicated and organized than is absolutely necessary in order to achieve its somewhat limited objectives. These objectives themselves developed step-by-step. Successful cooperation at one level of course leads

to cooperation at another level. That is what is now happening in Texas. We have since had discussions with other institutions from San Antonio, Houston, El Paso, Tyler, and many other Texas communities, and with the Texas Coordinating Board playing an active role, I think that Ed Windebank, who is here from Tarrant County, would agree with me that we seem to be moving toward a Texas consortium for the use of telecourses.

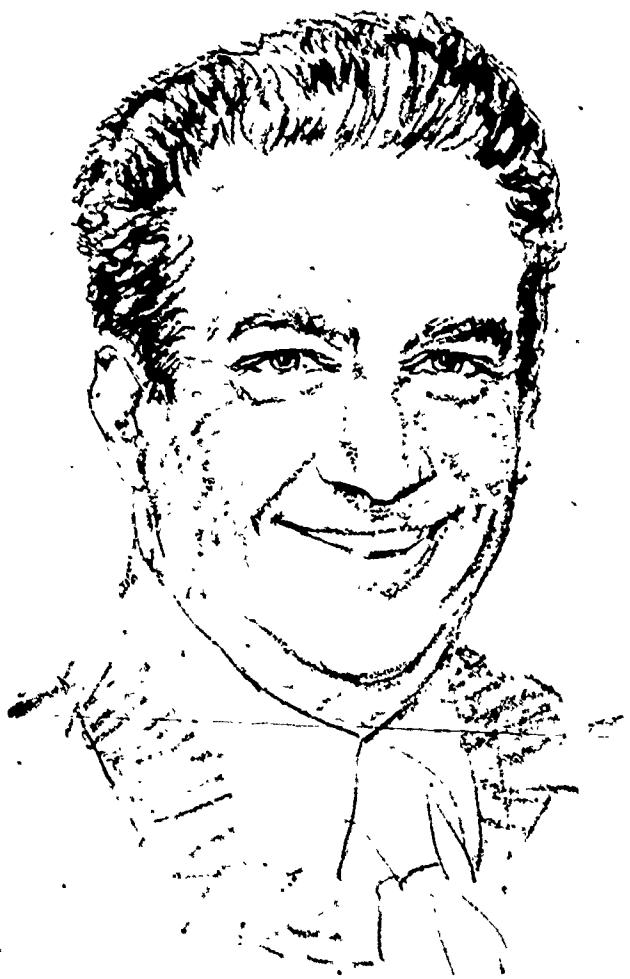
Moving from this local "consortium" to a larger scale, there are beginning to be some uses of our courses outside Texas, and of course we are using quite a few courses produced outside the state. Whether one would call this a consortium or not, it is certainly a leasing arrangement, and there is a sharing both of cost and of input to a degree.

From the perspective of our experience, I would like to touch upon what I feel to be some of the essential considerations in the formation of an open materials consortium on a local basis. Whether it is formal or informal. First of all, we must remember that these considerations all come back to the basic point that the primary reason for the formation of a consortium is economic in nature. It has to do with one institution's having difficulty in coming up with enough money to produce a quality product or, conversely, wanting to have its product used over a wide area and thus seeking help in getting it put together. First of all, what needs are to be served? Another less gentle way of saying this is, "Whose needs are to be served?" One answer that we have heard often is "the needs of the students." Well, that answer is both naive and incomplete. The needs of whose students? Of what students and what needs?

A more realistic answer is that the needs that are to be served are the needs of the student and faculty and the administration of the institution that will be paying the taxpayers' money for the development of the materials.

If the course is to be developed with funds provided by the taxpayers in Dallas County, Texas, then the needs of those taxpayers who are our students are the ones that we are going to be considering first. Since their needs are not unlike those of the students in Tarrant County, or indeed, in other locations, the course can be made available to them as well, and be used by them with an appropriate contribution by them toward the costs of development if they wish to do so. To the degree that we can make the course nationally useful, our local taxpayers can be relieved of the expense of developing materials and we can afford to produce better materials.

There will, I think, be a point at which some balance is achieved, and we will have a course which directly and specifically meets our own student and institutional needs and, at the same time, can be used by others. It is not our aim to go into the commercial course making business, and it is not our aim, really, to try to become a producer or a developer of national software at the expense of our institutional and local needs. I personally believe that this approach is not only responsive to the local taxpayers, who pay my salary, but also contributes to the diversity of open learning activity and alternatives which are available to others in the nation. It also, I think, improves the quality of the courseware which we do produce.



Franklin G. Bouwsma is vice-president of instructional resources for Miami-Dade Community College in Miami, Florida. He has served this past year as chairperson of the Post-Secondary Formal Education Task Force of the Advisory-Council of National Organizations (ACNO) of the Corporation for Public Broadcasting. He is also the American Council on Education representative to ACNO. Dr. Bouwsma was formerly general manager of the Detroit educational television station WTVS-TV and was assistant to the president of Delta College in Michigan.

Community College Consortia for Open Learning

**Franklin G. Bouwsma
Miami-Dade Community College District**

There are many different kinds of consortia activities in the field of open learning, for a very good reason. As you study the field, you become increasingly aware that cooperative work appears to be an essential ingredient for the open learning projects.

The recent study made by the task force on post-secondary formal education of ACNO to CPB noted, in its first recommendation, the need for cooperative in-consortia activity. The first recommendation states that the Corporation for Public Broadcasting (CPB) should cooperate with post-secondary institutions and other broadcast organizations at the national, regional, state, and local levels to establish desirable patterns for the mutual development of post-secondary formal education courses that include broadcast components. Note that in this recommendation to CPB, for the first time, we are suggesting that broadcast components are only a small part of

the general cooperative activity that must take place. Previous to this, broadcast areas had only been concerned with the broadcast component. We are suggesting the others.

The second recommendation states that the corporation for Public Broadcasting should encourage consortia in *ad hoc* groups of institutions to develop and use post-secondary courses of broadcast components. As we studied through the CPB project and worked with nearly 1,000 persons in higher learning and in broadcasting to develop these recommendations, we found there are certain features of open learning which tend to force cooperative and consortia activity on the part of institutions, producers, and distributors:

1. Most open learning projects today are becoming multi-media systems. They will require professional production, packaging, and distribution personnel in the process of development, delivery, and operation of the project. This requires new cooperative arrangements with textbook and other print material publishers. Expert writers and faculty from many colleges must work collaboratively in the design and development of the academic materials with producers and production centers, the audio-visual media, broadcast delivery systems, and the academic institutions using the materials in other locations.
2. The major delivery systems are very hard-pressed for use of their time and space. It is difficult for them to select one of hundreds of institutions or organizations on their coverage areas who have many noble projects in mind to serve the area needs. It is much easier to work with or form a consortium of users and/or producers and work with them as a single entity which develops its area priorities and assists the delivery system of broadcasting stations in its efforts to serve that coverage area.
3. The open learning audience is not quite sophisticated in its media taste. It will tend to overlook some poor presentations for the sake of education, but the evidence of much-used educational course material tends to point to higher production value and material sophistication getting much wider use nationally. Excellent production takes much time, many experts, and much money. And few institutions or organizations can support the cost of such an enterprise by themselves. It is also important to note that an institution will tend to dedicate most of its resources to such a major project during the two-year development phase. However, its

utilization needs are probably increasing so it will enter a consortium or library arrangement to get similar high-quality materials while involved in producing materials for itself and other institutions in the consortia.

4. Open learning projects in a community are requiring a great amount of training and techniques of working with the problems of identifying and organizing the new non-traditional student. Consortia are now being formed to bring expert assistance to the institutions that have common objectives or are located in similar areas.
5. Major curriculum changes are needed in order to present material to the nontraditional student. Different motivations are needed for student study, and many alternate strategies are required for the development and the packaging of the material. Most institutions can't afford the planning cost of such work, and therefore consortia are formed to gather experts in curriculum and course design from around the country for this phase of development.

When we did the CPB study this past year, we worked closely with the directors of most major open learning consortia in the country. It is our impression at this point that every consortium will operate differently, because the purposes are diverse. However, there are certain models which might be emulated for equivalent purposes, and whose arrangements you might wish to consider for your consortium moderation. For the sake of giving you exact information, I will now discuss only consortia of Miami-Dade.

Although you might find there are many other consortium models that might be better for your purposes, a typical consortium arrangement is the one which includes Miami Dade Community College, Coast Community College District, and the City Colleges of Chicago. This project is concerned at this time with the curriculum development of a humanities course for career-oriented students for the first year, and for the second year the institution will produce the necessary course materials. This is not in the open learning mode, but it is the design of materials for use by these colleges and other colleges in classroom and small study grouping.

The general contractors for a proposal we wrote jointly are the City Colleges of Chicago, who received the grant funds from the National Endowment for Humanities, and the Lilly Foundation. Faculty and staff of the three institutions received relief funds as agreed upon in budget discussions by the co-directors. Joint faculty and production planning meetings are held four times a year. Each

of these meetings lasts one week. Consultants are engaged by the general contractor under the supervision of a project academic coordinator who is an outside expert hired full-time for the project. This is a typical decision-making model for joint production by three external organizations. That is one consortium arrangement.

Here is another model. The *Ascent of Man* consortium of some 250 colleges, which we described in detail in another session, is a group operation which, because of its size and breadth, must operate very loosely. Intense communication with all of the institutions is impossible, so telephone and assigned clerical and professional staff must suffice for most emergencies. The bulk of the activities of the institutions are explained in packages that are mailed to the institutions. There is little opportunity for feedback from the colleges. There is no way that you can possibly make all the changes that everyone would like to have when you are dealing with this large a group. Therefore, in this kind of packaging, or something of this size, what you have to do is take your national model and run it through, and then urge the institutions to make those changes that they feel they need to make it fit their needs or their faculty requests. The major interplay of decision-making in this kind of consortium takes place between the network education office staff and management of the stations, and the two institutions developing the material and the publisher.

One of the most frequent designs of consortia is cooperative acquisition, development, and utilization of open learning materials. The Florida Statewide Television Consortium is an example of this kind of activity. In our state of Florida, the community colleges, on their own, came together to plan a network of consortia for the express purpose of delivering educational programs in the most efficient and economic manner possible. What emerged was a statewide consortium for the state of Florida, with mini-consortia covering geographical regions. Each mini-consortium is served by a station, so you have the six regions, each covered by a station, but you also have all the consortia working together in a larger statewide consortium effort.

At each institution in the consortium the local coordinator and one regional coordinator are appointed. The six regional coordinators then form an executive committee which becomes the vehicle for necessary decisions affecting the total consortium. Two ex-officio members are invited to participate: one representing the State Department of Educational TV Division and the other from the Division of Community Colleges. With this grouping of institutions at the regional mini-consortia

level, it became apparent it was practical to share resources and use the same TV stations for sharing programs. Each college, then, serves the constituency of its district and shares the cost of TV air time. This consortium structure was developed in a cooperative manner, as all of the institutions participated in determining the direction of the consortium, and they still continue to do so. Each institution has the option to select courses it wishes to offer and there is no obligation to participate. This started in January, 1974, and to date 24 of the state's 28 community colleges have participated in the offering. The data we have shows that about 10,000 individuals have been served so far this past year. Remember, in this instance the state consortium was developed at the initiative of the individual institutions; the model is to incorporate all the institutions. The community colleges participate in all the decisions reflecting the direction of the consortium, and the colleges on a regional basis share a common media base and pool the resources. Institutional faculties can easily integrate their own ideas into this program along with the trends developed elsewhere.

One of the most interesting cooperative activities involving a consortium of interests is that of the Associated Regional Colleges of Puerto Rico and Miami-Dade. This consortium is concerned with developing many projects at the same time. Now, the associated Regional Colleges from Puerto Rico, University of Puerto Rico, had shown interest in the use of our *Man and Environment* course, and had suggested, for maximum use of the program materials, that it would have to be reproduced in Spanish context and in the Spanish language. Continued correspondence with them led to general planning meetings between their six colleges and Miami-Dade, and a detailed plan of work was developed for staff travel and staff teams to work on this project. We devised an exact timeline and a pert chart of all activities, events, and review sessions. Once this was agreed upon between the institutions and we agreed to apply our resources in this way, that became the basis for all future agreements. This is one of the easiest consortia to form because, with the pert chart of activities, you know exactly where you are going, what your intentions are, and, by signing an agreement to follow that pert chart and to apply the resources, you have formed an operating consortium. Travel costs between the institutions for faculty and staff consultants to work on planning and production of course materials is agreed upon and contracted as a budget item, and the pert chart for the resource requirements is used as the contract. At this time we are not only completing the Spanish *Man and Environment* course for national release in January, with a complete new study guide and an anthology of reading selected from Spanish authors and

Spanish language test bank for computerized prescription system for study, but we are also developing a new course on the *Emerging Role of Women* in all media, and we are developing a shorthand course in both English and Spanish to be used in the instructional system in both institutions and released nationally. It is interesting to note that this consortium project can be brought into being easily by detailed planning and the acceptance of such planning.

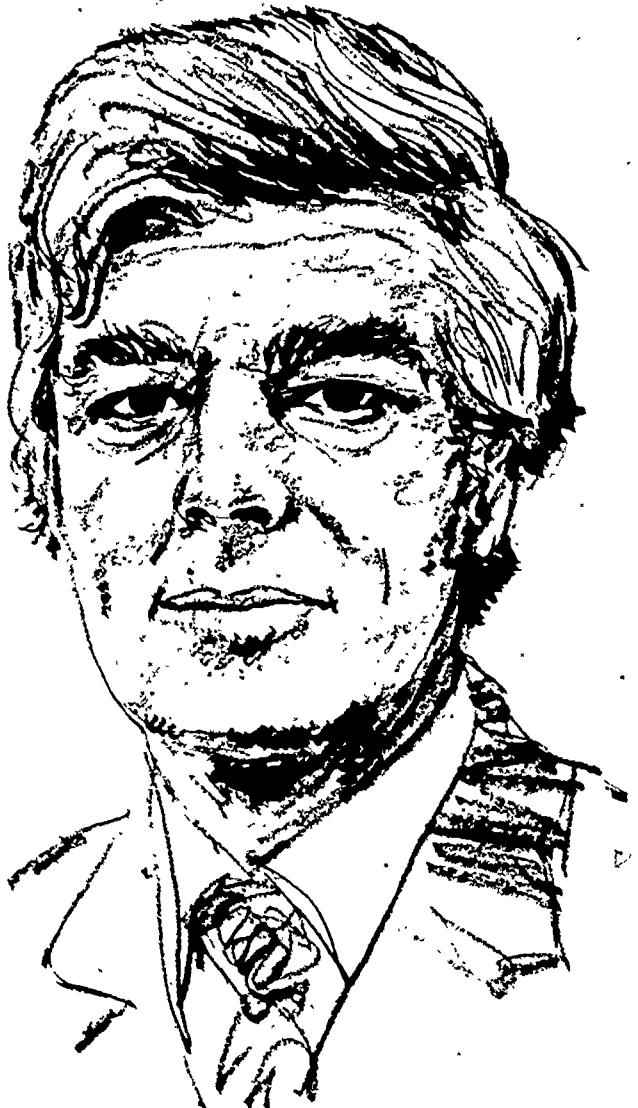
During the past three years, we have been involved in two other types of consortium activity which relate to the design of curricula and the development of production materials in collaboration with the colleges and the universities in foreign countries. Our planning curriculum consortium was formed with soft dollars supplies by the United States Office of Education. This is a group of 10 large community college districts around the United States which are formed around a Miami-Dade planning grant. We operated four national curriculum conferences over a two-year period. We developed modules of study and specific case studies to be produced for insertion in existing courses or new courses for campus use or for external use in the fields of humanities, natural sciences, social sciences, and environmental studies. That is one consortium activity in international studies.

The second type of consortium is the development of a production group in which Miami-Dade joined with a university or a group of community colleges, working with groups of faculty or staff to produce materials in foreign countries. We have developed proposals for funding, trained the faculty production staff, and developed and produced the final materials. Consortium work of this type was performed in cooperation with Syracuse University and the Urban Planning Institute in Ljubjana, Yugoslavia. We currently have two projects underway this summer, Jagiellonian University in Krakow, Poland, with a GT70 consortium, and with Washington University in St. Louis, and Nanzan University in Nagoya, Japan. All of these projects involve the development of materials for new open learning television courses. We are now producing these for the social sciences and humanities courses that we are designing. All of these projects were funded by the Institute for International Studies.

One of the more interesting projects that Miami-Dade did just recently was one devised with Mercer Community College in New Jersey and the Educa-

tional Testing Service of Princeton. This is organized with separate contracts with the Educational Testing Service and with Miami-Dade from Mercer Community College to assist in the development of an open learning course. The Miami Dade and Mercer faculty planned for various modular social science courses which can be used on either campus or cooperatively. This gives much latitude when the colleges differ on the validity of certain modules to meet their course needs. When the Mercer and Miami-Dade subject matter, materials needs, and production themes are determined, then a production sub-contract is let by Mercer College for the production of those materials. Both institutions share in the production costs and in the utilization. Educational Testing Service performs evaluation and consultation throughout the project. These materials have been tested out in the Prison Educational Network in the state of New Jersey.

Among models that were discussed in the CPB study which I recommend for your study are the Chicago Metropolitan Higher Education Council Plan, discussed as a model for study for consortium activity; the Tri-State Consortium, developed around WNET, New York, being coordinated by Shirley Gillette; and the Multi-County Consortium in Southern California (and especially its Project Out-Reach consortium, which is the most detailed plan that we found in the country for the use of faculty and staff on a coordinated basis. It is set up on a basis of two different county organizations with many public colleges and universities, including community colleges and the university structure.) In Southern California, you will find many consortia operating within the coverage area of a station. These are being developed and formed almost every month. Models for this kind of activity can be found in the Los Angeles Consortium, and the Northern California Consortium. We found these to be very detailed and very comprehensive plans that are operating well and being accepted strongly within the academic community. They appear slightly different in their management systems, but they are extremely well-operated and are very effective in their work in open learning broadcast. There are many different consortia being formed every day in the field of open learning, for many different purposes. It is expected that all institutions will probably be involved in two or three consortia all of the time for production and utilization purposes. It is my hope that the models that I have discussed briefly would help to stimulate your interest in such activities.



Barry O. Shorthouse is currently director of the North American Office of the Open University of the United Kingdom. Prior to joining the OU, Dr. Shorthouse was a senior lecturer in chemical engineering at Exeter University and at Liverpool, where he concurrently was director of the design group. Dr. Shorthouse has also worked in industry as a commercial consultant and as Manager of Research for International Synthetic Rubber and with English Electric (CEGB) in the area of nuclear power. Dr. Shorthouse has his Ph.D. in chemical engineering from Cambridge University.

The Open University

Barry O. Shorthouse Open University of the United Kingdom

The first thoughts on The Open University were voiced publically in 1963 by Harold Wilson in a political campaign speech in Glasgow. This took the educational world, and I believe some of his colleagues, by surprise. A subsequent "white paper" on the subject was published in 1966. Immediately following this "white paper," a planning committee was set up and made its first report in 1969.

Work on The OU started and the Royal Charter was granted in 1969. Staff began to be recruited in 1969 and the OU admitted its first students, numbering slightly under 20,000, in 1971. By 1973, due to a credit exemption system, The OU had produced its first graduates. Today, 1975, we have close to 55,000 students enrolled in the undergraduate program and a further 9,000 in the post-experience program. The student demand for The Open University courses has been such that, at the moment, we are suffering the

embarrassment of turning away large numbers of potential students. In fact, in some courses, such as the foundation courses in Arts (Humanities) and Social Sciences, the turn away ratio can be as high as four to one.

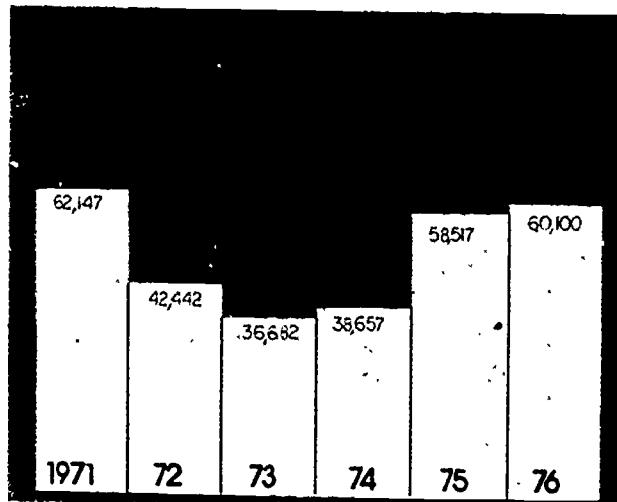


Figure 1

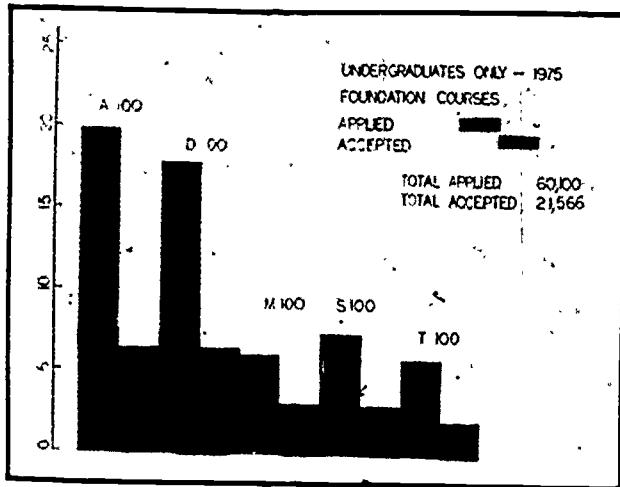


Figure 2

What is The Open University? Briefly. The Open University is an at-a-distance-adult-learning organization using all the aspects of the multi-media to offer both conventional and inter-disciplinary courses at an undergraduate level. In addition it has other activities, such as the post-experience program, designed for the professions, enabling updating, career enriching, or career changing.

All students of the OU are off campus, that is off The Open University campus, but not necessarily off the campuses of other universities. The facilities of other educational organizations are utilized during the evenings, weekends, and the

long summer vacations. There are an increasing number of universities and colleges utilizing OU courses, teaching and learning programs for their own conventional undergraduate needs.

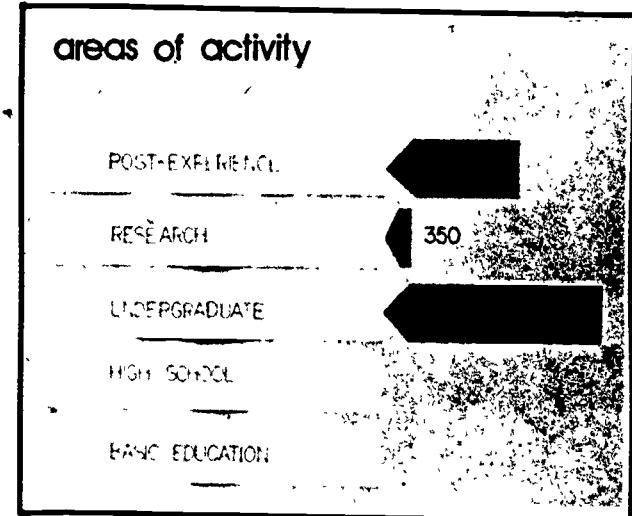


Figure 3

Broadly, the involvement and the investment that go into producing an OU course falls into three equal parts.

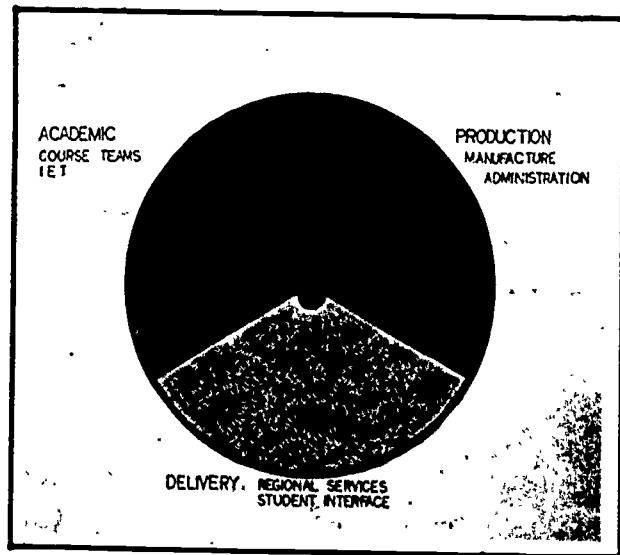


Figure 4

First, the most easily understood and defined is the academic content. This is the academic material, the conceptual material, the ideas and intellectual techniques to which a student should be exposed. The OU tries to create and produce course material in such a way that it will be acceptable to the adult learner and, what is more important, the adult learner at a distance—the adult learner in academic isolation.

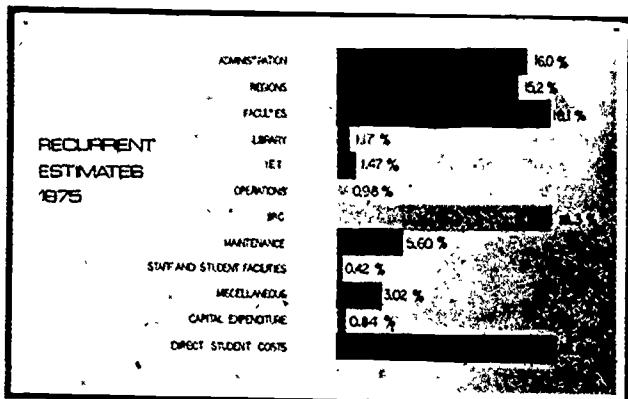


Figure 5

The academics from our own organization (we have close to 300 academics on the payroll), other universities throughout the United Kingdom, the United States, Australia, and other areas participate in writing courses. Because we are dealing with relatively large numbers of students, the cost

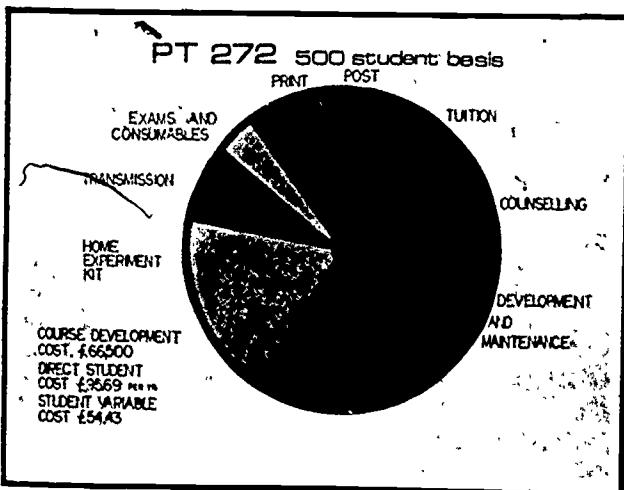


Figure 6

of the academic content can be easily defrayed. This enables the OU to be selective in who takes part in the preparation of the material. We have sent camera teams and outside broadcast units all over the world and we have invited some of the most eminent educationalists, experts, and specialists to take part in the preparation of the course material.

For example, the European Economic Community course, which was written for United Kingdom and European consumption, has contributions from the six economic commissioners of the EEC, the more lucid politicians, well-known journalists, and political philosophers. It is because the OU is dealing with large numbers that it can afford to collect and pay for such teams of talent.

How do we organize a group of prima donna academics into a united, consolidated, and ori-

tated team? This is one of the minor breakthroughs which I believe we have made. It is the course team operation. The course team consists of a group of academics (four, five, six in number) plus: a course team chairman—a man who has to be diplomatic, tactful and able to keep order; an editor—often a man with journalistic experience; a media or television man; persons who have experience with the adult learner—particularly the adult learner in adverse conditions; an educational technologist who is concerned with the over-all aims and objectives of the course—particularly its assessment and evaluation; a series of course team assistants; and other specialists, drawn in from time to time, who contribute specialist skill to the course.

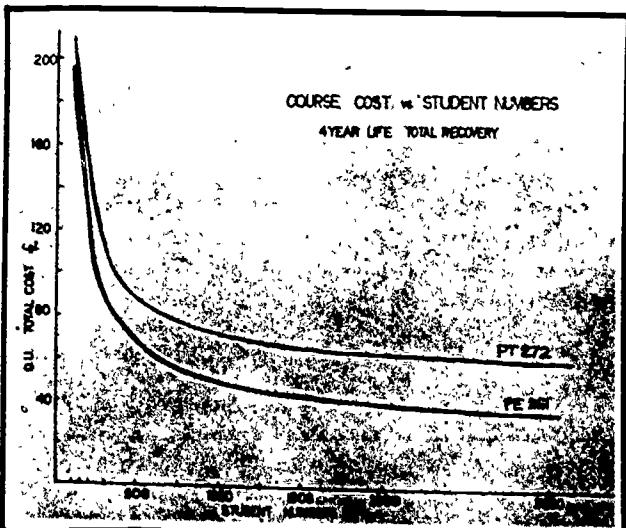


Figure 7

A course can not be considered in isolation; it is not a system with firm and impenetrable boundaries. The course must have educational aims and objectives. We must know exactly what concepts we are expecting the student to understand and what he will be able to do with the material or with himself after he has successfully completed the course. A full-credit course is made up of 32/34 units each of about 40,000 words, which constitute a work load of about 15 hours. Within these units we have to make certain that there is not an excessive overlap and neither are there any voids. The material itself must be paced to the needs and ability of the student, and this often means it has a non-linear work load or non-linear intellectual load throughout the duration of the course. There are a variety of concepts which all would like to put into the course, but which might not be best tackled by the particular methodology we are using. When we deal with concepts, we must decide if the written word, the diagram, the picture, television, radio, tapes, home experimental kits, or face-to-face contact is the best mode for the student.

We must decide which concept is of primary importance and which is reinforcing. We must know what it would "cost" and what the alternatives are.

An example would be the concepts of ductility, toughness, hardness, and brittleness that would take some fairly cogent and brilliant writing to describe such properties to a student. It is not so certain the spoken word would be any better in conveying the concept. That sort of thing could be done by a home experimental kit (which itself may be made up of 50 or more items), and comprised in this case of items such as pieces of unvulcanized rubber, phosphate bronze, ceramic rods, soft iron wire, etc. Most concepts can be attractively presented if enough time and ingenuity are spent on devising suitable methods.

Another example, in returning to the European Economic Community course, is the Treaty of Rome, which is a document difficult to read. If one is dealing with some aspect of the Treaty, such as the different agricultural policy for the North German area of Schleswig, Holstein, compared with the Italian Po valley, again the written word would not necessarily convey these aspects of the problem or a feel for the actual country. Diagrams, graphs, and charts will be perfectly adequate for, say, the production of various products, but to get a feel of the country the television camera is a much more suitable medium.

be expected of them. A reasonable work and concepts load during their course must be sought. The team must know properties and characteristics the students will have by the time they exit the course. There must be very strong links, not only internally in the course—or, to use the chemists' term, intralinks—but also interlinks with the other courses within that particular discipline, with other faculties, and with other lines of study. The student must see each course as a part of a coherent whole.

The third and most important aspect, as far as The Open University undergraduate is concerned, is the delivery system. This is delivery used in the broadest sense of the word. Looking at the material the student receives from an academic point of view, about 40 per cent to 45 per cent of the course material which he is expected to understand is that which is sent by the postal service—the correspondence material. About a further 5 per cent of the material is transmitted to him by television and probably about another 5 percent by radio. In addition, he will get a home experimental kit which, if in a science, engineering, or technology subject, might cover about 15 per cent of the material for the course. He also will get in certain courses discs, tapes, and slides, in addition to material from other sources, such as the course guide, course reader, set books, and reference books. Most important will be what he gets from the study centers and the summer schools.

The study centers are facilities which The Open University hires from other universities and other educational organizations during the host organizations' down time, such as evenings, weekends, the long vacations. These are the places where the students can go and see the part-time employees of The Open University, called tutors and counselors.

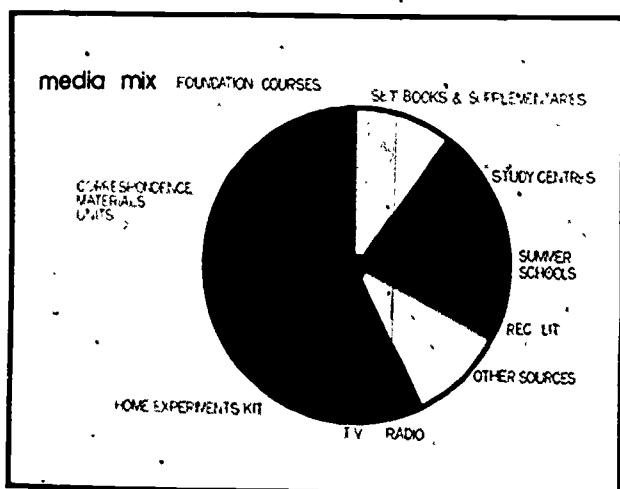


Figure 8

Going through the concepts in the course with the course team and deciding which are important, which are unimportant, and what is the best method and mode of operation to transmit these concepts to the students is very involved. The course team itself must write the material, often in four different drafts before it finally gets to the printer. The course team must consider the entry behavior of the students - and what can reasonably

Future's Desirable Qualities		Present	Future	Present	Future	Present	Future
		1	2	3	4	5	6
1. Integrity							
2. Honesty							
3. Loyalty							
4. Fairness							
5. Justice							
6. Integrity							
7. Honesty							
8. Loyalty							
9. Fairness							
10. Justice							
11. Integrity							
12. Honesty							
13. Loyalty							
14. Fairness							
15. Justice							
16. Integrity							
17. Honesty							
18. Loyalty							
19. Fairness							
20. Justice							

Figure 9

The student's tutor is a man selected for his subject and academic expertise, who will concern himself mainly with the tutorial aspects of the course. He will explain, enrich, and sometimes re-organize parts of the material which the student does not understand. He will also organize laboratory facilities if necessary, or outings to theaters or exhibitions or museums. He will aid the student in all the academic aspects of his course.

However, we are dealing with an adult learner—who may not have had any formal education since he left school at 15 and has had no higher education. Some of our students are timid, frightened, hesitant of the big academic ethos which has been created. They need a guide, a friend, and a mentor, somebody they can turn to, somebody who will help them with some of the trivia (trivia to us, but not to them) and who will help them organize their study time and their work loads, and also offer sympathetic and helpful advice on such topics as essay writing. They need encouragement. The

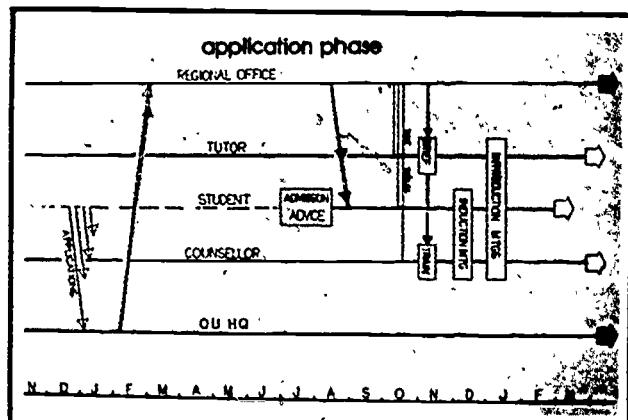


Figure 10

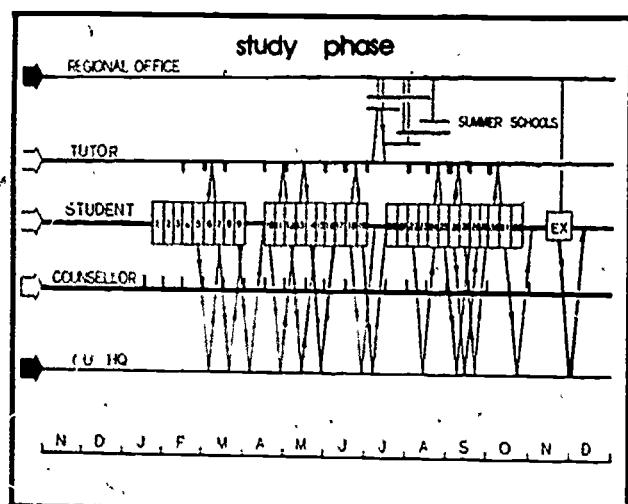


Figure 11

men who provide these services are called counselors and are initially selected for their sympathetic and approachable nature, but they themselves are academics in their own right. During the course of the year, they begin to assume an additional tutorial role, so that as the student progresses through his course and his need for blatant sympathy diminishes, he can avail himself of the extra academic, tutorial facility.

The tutors and counselors are organized on a regional basis and the whole United Kingdom is split up into 13 regions. Each region has its own central administrative office which can approach or exceed the work load of some of the minor colleges in the United Kingdom. For instance, the total student population in the North West Region of the United Kingdom, i.e. the area which encompasses Liverpool and Manchester, has 7,000 students and has a part-time staff of about 400. It organizes 35 study centers.

The Regions Compared

Region	Students	Part-time Staff	Full-time Staff	Study Centers	Examiners	Administrative Staff
01 LONDON	610,210	701	54	619	21	
03 SOUTH WEST	845,010	3532	36	336	16	
05 EAST MID	1,77,970	3519	33	314	19	
07 YORKSHIRE	1,79,290	9122	38	412	22	
09 WIRL	1,77,220	2953	35	289	20	
11 SCOTLAND	1,46,000	4639	35	430	19	
13 SOUTH EAST	1,49,680	3761	31	316	20	

Figure 12

It is heartening that there is no shortage of applicants for part-time jobs. The Open University system has fired the imagination of the conventional academic. It is in part due to the delight and pleasure they get from teaching adults, particularly compared with some undergraduates.

In summary, therefore, the OU has constructed an organization which is in a way analogous to an "academic truck." It is able to use this particular methodology of collecting a course team together and of producing and delivering courses which seem to work very effectively across all the disciplines and faculties, i.e. Humanities, Social Science, Science, Mathematics, Technology, and Educational Studies. It works at a variety of levels from the entry level, which is somewhat below the United Kingdom "A" level, to the fourth-level

courses, which are in a number of cases in advance of the first degree work done in British universities.

Aside from this, it seems we have been able to excite and keep the interest of the adult learner, who may be living in academic isolation, may have many demands on his time, and is almost certainly in a full-time job. The pass rates vary from course to course: in the Humanities and Social Sciences we have a pass rate of over 85 per cent. In Science it is a little closer to 75 per cent and in Mathematics, it drops to about 70 percent. There is a variation between year and year, and between the urban, suburban, and rural areas. These courses have been successful, and a growing number of universities in the United Kingdom are adopting them for their full-time undergraduate students.

Of course The Open University has spread. We are now actively engaged in the Free University of Iran and the Everyman's University of Israel. It is well known in the USA we have had, from the outset, the active cooperation and support of the Universities of Rutgers, Maryland, and Houston, who are successfully running Open University programs. In some cases the student enrollment has gone up by a factor of 10 from the first offering to the latest figures. In the case, say, of Maryland University they are offering over 16 different courses and are expecting very soon to have their first graduates from Open University methods and materials: In addition there are some 22 to 24 universities throughout the United States which are taking our courses in whole or in part.

The prospects look fairly exciting. Once a method has been developed, one can immediately see a vista of new and exciting opportunities.

The first, which seems to have great potential, is the joint production between universities on this side of the Atlantic and our own universities in the United Kingdom on courses which will be applicable, not only between the two nations, but also throughout the world. For instance, a foundation course in Business Administration using Open University methods both in this country and the United Kingdom will act as a foundation for higher level course productions on management, accountancy, retailing, marketing, market research, and a variety of other subjects.

Another possibility is the use of Open University courses for the training and the help of the aged, i.e. a course on the legal rights and obligations of the aged, or on nutrition and the aged, or on keeping fit and the aged, hobbies and interests, etc. Not only are these applicable to the retired ..

person, but also those who are looking after the retired person, such as social workers, administrators, even architects. Another group becoming increasingly interested are those who are going to retire. We will all become geriatrics one day. The political point which should not be lost is that "You don't become disenfranchised because you have retired."

A third area is the developing world. Using the techniques of The Open University, the application to large populations dispersed over large areas and distance becomes attractive. There are certain problems in setting up the conventional university system in the developing areas of the world. Distance and migration from the land to the cities are not the least. The Open University is able to bring education to the people rather than dragging people from the environment to the cities. We are able not only to deal with the undergraduate level, but also at levels which, academically speaking, are well below this. One has immediately in mind the idea of using our system to develop courses in basic agriculture, basic public hygiene, even enhancing the skills of the local school master to tackle adult and juvenile illiteracy problems.

A fourth area which may be not so applicable to the developing as the developed countries is the use of our methods for career retraining, career enrichment, career changing. The economics of comparing The Open University system with the conventional system for an undergraduate is cost figures of something like a quarter to a sixth of the cost of conventional university. And in certain courses, where a limited amount of capital equipment is necessary, these figures even approach a tenth, which is, by anybody's yardstick, healthy.

Finally, the potential of The Open University methodology, both in this country and abroad, is considerable. And the exploitation of the system depends upon the capacity which is available to enable this to be realized. The most attractive of all prospects which we see before The Open University at the present time is the collaboration with other academic institutions throughout the world, at all levels.

"United we stand, divided we fall," may be hewn in the stonework above the drawbridge to the ivory tower of academic orthodoxy. It is often restrictive, blinkered, aloof, and remote. It is a counsel of caution, convergence, and conceit. And it is a negative philosophy doomed to failure as a survival strategy. Rather, would I suggest that collaboration should be a keynote so that between academic institutions, "The whole may be greater than the sum of the parts."

Betty Jo Mayeske is currently the director of Open University at the University of Maryland. She has been working with the University of Maryland program to use the material from the Open University of the United Kingdom since the beginning of the project in 1972. Dr. Mayeske has taught at the University of Maryland and at Bowie State College. She is a graduate of the University of Illinois and received her Ph.D. in Roman history from the University of Maryland.



Can the Open University of the United Kingdom Be Used as a Model for U.S. Systems?

Betty Jo Mayeske
University of Maryland

Before I suggest most emphatically that the Open University of the United Kingdom learning system and the OU courses can be used as a model for some American institutions dedicated to adult education, I probably need to tell you something about the University of Maryland.

The University of Maryland is a land grant institution founded in 1856 to meet the needs of the 18-to-22-year-old residential student. The University of Maryland's enrollment totalled 75,263 in the fall semester of 1974. Maryland is the 12th largest institution in the nation. The University is divided into five autonomous campuses led by five chancellors. Overall, university administration is vested in a president and vice-presidents and governed by a 15-member board of regents responsible to the state legislature, and hence to the state citizens.

The campus that I represent is the University of Maryland University College. We are the continuing education campus, and we have been serving the adult students for the last 28 years. We operate on a world-wide basis and offer the AA, the BA, and the BS degrees. We are self-supporting, while governed by the president and the board of regents. In the Maryland-DC area, we offer, each semester, more than 600 credit courses. We serve the military, government, police, and Maryland teachers, as well as our Atlantic, European, and Far Eastern divisions, in which we bring programs to the U.S. military, government personnel, and dependents in 22 foreign countries on four continents. We also have a Conferences and Institutes Division which features non-credit courses, workshops, training courses, and seminars for professionals and civic groups.

Last semester, UMUC credit divisions had 52,068 students enrolled in two semesters, with total enrollments of 148,203. Conferences and Institutes, our non-credit division, had 25,000 participants in its programs. That is what University College does in this area. If you know anything about the Washington-Baltimore area, you know that there is a community college or private institution at every exit sign on the beltway. As you have seen, University College also has its share of the adult education market. Why, then, in 1972, did we heed the siren call of the Open University of the United Kingdom?

Some background. In 1972, the Carnegie Corporation funded the College Board to evaluate a one-year experiment using the open university system and courses in American institutions. The three institutions involved were the University of Houston, Rutgers, and the University of Maryland. This one-year study was published by the Educational Testing Service as *The British Open University in the United States*. During this time, Salem State College also began using the OU material.

What did Maryland find appealing about the UKOU at that particular time? First, the open university courses and the learning system itself had been specifically designed for the adult part-time student. For 25 years, University College had been reaching the adult student. So the question was "Could this be of importance to us? Could it help our mission?" Also, there was the vague, little understood appeal of the OU multi-media learning system. We knew that the OU courses were supported by weekly 25-minute television shows produced by BBC. This sounded very current, very avant-garde. We wondered if OU courses could be an attractive alternative to the system that we already had. Were there other adult students we could serve that were not comfortable with the one-night-

a-week course on campus? So, in 1972, we started with the Humanities Foundation Course. That year must have been a good year for the humanities, because the course and the system were well received. However, I should mention some of the changes that we have had to make with the OU courses and system.

When we talk of a one-credit course in England, we are talking about a 32 to 36-week learning experience, which Maryland equates to 18 credit hours in the American course credit system. The OU foundation courses should be delivered *in toto*. Yet this presents some problems for Americans. For example, can a student pay 18 times \$31 per credit hour in tuition immediately? Can a student guarantee that he will be in this area for 32 to 36 weeks? So, recognizing the American tradition, we divided these courses into three terms. The student is thereby allowed to enroll for a term of 12 weeks for 6 credits. Then he re-enrolls for another 12 weeks for 6 credits and again for a third term to earn the total of 18 credits.

This is where I came in. I had been teaching Humanities in the College Park campus and, when hired by University College, was told to try to get 100 students involved in the OU experiment. One hundred-fifty sets of OU books had been ordered and the British dock strike had just started. Pretty soon, after very hasty publicity, we had 200 students enrolled, then 368. We finally had to cut enrollments off at 304; for we managed to acquire only 300 sets of books. The last four students could register because they were husband-and-wife teams and could share books.

With reference to this first year, the ETS report suggests that these courses were not for the disadvantaged. Our publicity efforts were directed at the general public. We registered on a first come-first served basis and made no effort to reach and to enroll designated groups.

In our second year we responded to student enthusiasm and expanded our course offerings. We offered all five of the OU foundation courses—Humanities, Technology, Social Science, Mathematics, and Natural Science. We started one upper-level course—*The Renaissance and Reformation*. This was not a comfortable year for the Open University Division, for only 370 students enrolled in six courses. In order to offer the needed course variety and show our commitment to the system, we had dispersed our student population. But our efforts were rewarded in our third year, for 670 students enrolled. In our fourth year, we will again offer all five foundation courses at ten upper level courses.

There is now an open university course route to the University of Maryland degree. As more OU

courses enter our system, greater variety in each discipline will be available. We are now a division of University College with a full-time staff of nine professionals and a part-time tutorial staff of 40.

The management of the learning system—the story of the meshing of two educational systems—needs to be discussed. I most heartily agree with Sam Gould's recommendations that we need to understand the needs of the students; we need to know their academic capabilities. May I add that the adult student's time-schedule capabilities need to be honored also. The OU learning system as interpreted by Maryland makes an effort to honor the student's academic and time-schedule capabilities.

I am going to go over the four points that Sir Walter Perry, vice-chancellor of the Open University of the United Kingdom, mentioned as goals of that institution. I shall discuss Maryland's interpretation of those goals. I think we have devised a system of compromise management. First, there is The Open University's goal that the system should be open to all. The University of Maryland is not allowed to enroll students unless they have a high school diploma or the equivalent, so we simply could not have Maryland's program open to all.

The next thing that Sir Walter stressed was that the OU courses and system are designed for the adult student. May I go through what that means in England, as I understand it, and how Maryland interprets the system.

Sir Walter has mentioned student-active texts, the core of the learning system, produced by the academic course teams. These texts encourage the student to stop and question the material, to review, to go back, and to assess their understanding. These books are true guides to learning—allowing for halts, for review, and for questions. The course material is expanded by the use of traditional texts that further develop or clarify the subject matter. Assignments and final exams not only check student knowledge but support the educational experience.

Maryland uses the OU student active texts almost totally. Generally we assign the adjunct texts if available in America. Sometimes we choose support texts that seem more relevant to the American scene. The OU assignments and final exams have been tested with British students. We use them but don't hesitate to make changes, and, of course, change when they become out-dated.

The OU courses use academic support material in the form of weekly 25-minute films and tapes. In England the films are "telly" shows and radio programs broadcast on the BBC. The films are not the

"talking face" variety; rather by means of the camera, you visit Warsaw and Ibaden in the Urban Development course and watch the science experiment being performed in the Science course. The radio programs allow visiting scholars to comment on the week's material and course team members to reiterate important points.

There is not a vast national educational channel in America. We could not depend upon the telly and the radio. So every tutor carries a 16 mm projector and tape recorder to the weekly centers and students come to our office to see and hear any films or tapes they might have missed. Currently we have seven courses broadcast on Channel 22, a Maryland Public Broadcasting Channel. We will continue to carry projectors, though, until the OU films can be aired in comfortable early morning and evening hours.

The OU has designed kits to accompany courses that need laboratory and experimental work. We buy these superbly packaged kits from the OUUK and, as in England, the students use them on loan from the University in their homes.

The system encourages and makes possible independent study. But it was recognized that students can feel too isolated without contact with tutors (the academic support person) and fellow students. For this reason convenient nationwide study centers were designated in England. At the center the tutor and students meet to discuss and review the material. At Maryland this concept was a pleasure to interpret. We arrange learning centers for every 20 students in community locations that meet weekly. As in England, the tutor is to be an academic resource person, not a lecturer, and the center is conducted so that students are not academically penalized if they cannot attend. We also encourage the individual tutorial by phone, by mail, or at a corner coffee shop.

Sir Walter mentioned a third goal of the OU that the student be able to pursue a University degree on a part-time basis and in his own home. I think you see how the learning system is structured so that the student may work alone or may choose to use many forms of institutional support. At Maryland we stress the weekly learning system and a close tutor-student relationship. We found that there were many community locations available where weekly centers may be situated so that student commuting becomes minimal. Rooms in libraries, high schools, military installations, and private businesses are possible locations for centers. Part-time study is totally possible with the OU system. The large blocks of credit can lead to a reasonable degree time goal. Adults respond favorably to the possibility of moving rapidly towards a

reasonable degree completion date earned on a part-time basis.

Sir Walter's fourth goal—total academic acceptability of the OU courses—is well met. The course teams did a superb job: Maryland academics have reviewed the material and praised the academic content. Special praise is won by the interdisciplinary foundation courses that emphasize the skills common to several disciplines. The courses were designed to reach a large audience, to encourage critical thinking, and to present a variety of academic views. This critical perspective has also won acclaim.

The Maryland academic staff, our tutors, stay with the same students and center throughout the course. Generally our tutors are trained as specialists and it is through working together and sharing academic expertise that they become generalists. So tutors function as resource persons for students and for their peers.

Adaptation and modification of OU courses was not our goal. We desired to honor the course team performance as it stands whenever possible. We have engaged in some modification in specific instances. The Social Science Foundation Course illustrates economic theory with reference to the

Bank of England. This example is not comfortable for American students. After reviewing the material before the course is offered, the tutors, consultants, and academic coordinators work together to make revisions and additions. A change of emphasis might be desirable. So the tutors suggest examples current to the American scene in addition to the written case study in those examples that refer to the British scene.

The Open University is growing at the University of Maryland. We expect to offer 30 OU courses within the next five years. We cooperate with a group of institutions in a consortium—COUP—made up of Open University Course users. There are some courses necessary to the American curriculum which may never be produced by the OUUK. In cooperation with the Maryland PBS station and other interested institutions, we hope to fill these needs with our own course development efforts. Our three-year history speaks to the excellence of the OUUK learning system and the courses and to the fact that there is a place in American institutions for this attractive alternative. The management of such an educational endeavor—the meshing of two systems—is possible and worthwhile. Interpretation and modification is done where necessary. The adult student benefits from this form of creative management.



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Paid Educational Leaves: Implications for Work and Education in America

**Herbert A. Levine
Rutgers University**

Al Shanker, president of the American Federation of Teachers, is developing a new concept. He says if you have Medicare for the body, why can't you have Educare for the Mind? And he's therefore suggesting a whole lifelong learning program from pre-school education all the way through adult education.

One of the concepts he puts forth is that of workers' sabbaticals. He suggests that the American worker is entitled to a period of contemplation and renewal which has heretofore been reserved for those of us from academe.

There are at least 20 million American workers who belong to trade unions. We have 80 million people in the United States who work. It doesn't matter if they work with their minds, or work with their hands, or if they work for hourly wages or salaries. Those people are important to us, and it's about them that I'd like to talk.

We often speak about minority groups: black people, Hungarian people, Spanish-speaking people, Swedish and Polish people, and who knows what other kinds of people we have in this country. But we sometimes forget that most of these people are working people.

The important thing about blacks is that as a group they don't make enough money. It isn't that they happen to be black. Let's talk about Spanish-speaking people: what's the big problem with Spanish-speaking people? It really doesn't matter what language one speaks. It matters how much money one can make, and whether or not one can send his children to school, or whether one can have a house and a car and survive. If one can do that, one's language doesn't matter. As a matter of fact, an individual earning a reasonable salary traveling in a foreign place will find that people will speak the language of the traveler. But if one is a working person, one finds that people will tell him to hurry up and learn their language, or else "Go home where you came from."

That's about what we do to people when they come to the United States. If they speak Hungarian, we say that's not a good language. They have to learn how to speak English. But if they're Hungarian and rich, somebody gets a translator.

It's extremely important to recognize the differences in the way we look at people—the way we perceive people's needs—and the kinds of things we develop educational programs to do.

I recently came across an argument which proposed that the difference in the weekly paycheck really doesn't make it worthwhile for a high school graduate to go on to college. It seems to me that the point the speaker was trying to make was "What's the use of going on to college for four more years? If you get a job right out of high school, you do just as well, or better." I don't believe it. I don't know who did the statistics. He might be a nice fellow. But I really don't believe his statement. If he's right, then I'd fire all the rest of you, because if it's true that there's such a poor relationship between education and the ability to work and earn a living in this country, we'd better do something about the educators before people come and burn down their buildings. Because working people would not like to be cheated again.

Working people have paid for their education in so many ways. Large numbers of them go through an apprentice period, others start at a low rate so they can be trainees on the job and work their way up. Many sacrifice their time and their energy to go to school at night, and, furthermore, they pay taxes which permit other people to go to school.

So, while we're thinking about making a reality of the potential educational birthright of Americans, we shouldn't forget that working people constitute the largest proportion of Americans in the United States who are deprived of some of the educational benefits of our society.

Something has to be done about it. These working people are the ones who are going to vote down our school budgets. They are the people who are going to go into the state legislature and cut back our university appropriations. They are the people who are going to make life awfully miserable for us if we continue this procedure. They are the only people left in the United States who believe that the streets are paved with gold.

When they, or their fathers, or their grandfathers, came here, they were told that the streets were paved with gold, and all they had to do was pick it up. Now, you and I think that's a joke, but they don't. Since you have the National Institute of Education (NIE) and foundations, you haven't even bothered to bend over and pick up the gold that's lying on the streets.

Well, we are bending over now, because we're entering another depression. We are beginning to think that we have restricted resources in the United States. But I suggest to you that we suffer less from the matter of limited resources than we suffer from a limited vision of how to utilize the resources that we already have available to us.

I'd like to raise three matters for your consideration: a discussion of the resources that are available but not used; the question of paid educational leave; and the whole question of educational opportunity in the United States, in Europe, or anywhere else in the world.

Let us turn first to the available resources. Management in the United States probably spends more money on educational activity than any of us can calculate. I won't even attempt to try it, but I know billions and billions of dollars are being spent for that purpose in the United States alone. Management spends that money training the people in its work force because we haven't properly educated them to do the jobs they're supposed to do. Because we haven't done it, management does it. And management is becoming more and more convinced, unfortunately, that they'd better not let us do any of it; that the sooner they can get a young person, the better. Then they can educate him their way. I think this would be a disaster for a democratic society.

We can't afford to have industry educate our population. That must be done by the public educational system. If the public educational system

doesn't do it properly, somebody must revise it or change it. The fact is that the public educational system has made only minimal efforts to integrate its efforts with those of industry.

For a while, unions didn't pay much attention to the situation because when unions wanted an education for their members, they went to the public treasury. It was the labor movement, back in the 1840's, which joined the fight for free universal public education. In the 1840's, you may recall that the unions' first slogan was for a "10-hour day," their second was "Free, universal, public education." They won the free primary school and secondary school.

Why didn't they say "Free universal education for life?" Why didn't they say "Free universal education for lifelong learning?" Only in this century have we become aware of the need for that. They didn't know about the lifelong learning concept then, nor about paid educational leave, nor about recurrent and continuing education. Nor, I must add, did we professionals. One obtains a high school education and stops. Why? We know it's not enough. Now we have community colleges, universities, and other places, but not everybody, by law, is entitled to go to all of those places. One is entitled to go only if one can afford to pay, or if someone else will pay.

Management is very generous to those whom it feels will serve them. They send a lot of people to school, and they pay. But they want them to study the things management wants them to know. And that is different. While it's nice to have help in furthering one's education, the situation is much different than having the right to get a free public education - as much as one needs - for oneself. One would assume that if one planned and obtained the education of one's choice, management and society at large would benefit. Then, everyone would be happy.

Right now, we can't approach that state of affairs for several reasons. One of them is that we don't know enough about management's expenditures on education, nor about the programs that management conducts.

Unions have just recently turned their attention to the question, "What does management do in the educational field?" They are concerned with "What are the educational needs of our members and their families?" They are especially interested in knowing how educational opportunities are to be provided. The unions in Washington ask for legislation to provide the educational services that their members need. But they don't always get it, in some large measure because they don't always

have the full support in Washington from one important group - management.

When the unions went to Washington for pensions, they went to the public treasury and asked for social security and other measures. But that didn't stop them from negotiating pensions through collective bargaining also. As a result, they now have pensions for their members, plus social security. They wanted unemployment insurance for workers who were laid off. They also negotiated supplementary unemployment benefits from the companies, so that laid-off workers in normal times lose no money during that laid-off period. When it came to health and welfare, unions preferred a national health bill. When they didn't get it from the national government, they negotiated with employers for health benefits for themselves and for their wives and for their children. First the programs were contributory; then the companies paid the whole thing.

In recent years, unions have begun to negotiate educational benefits for their members in the same way that they negotiated all the other fringe benefits. This idea has taken several forms. There is, for example, the tuition refund plan negotiated between the United Auto Workers and the auto industry. The tuition refund principle permits a worker to go to school, pay out a certain amount of money, and be reimbursed by the company. The UAW-auto industry agreement sets the ceiling at \$700 per worker per year.

How many General Motors workers are there in the United States? Over 400,000. They have about \$700 each, maximum, to spend on education each year. That's approximately \$200 million. In one way, of course, this is a mythical figure, because not all workers will want or be able to use the maximum potential. Nevertheless, an effort by educators to help workers use these funds seems not only warranted, but mandatory.

Workers participating in this program have a very wide choice. In the early days of tuition refund programs, choices tended to be narrow and job-related. The UAW-GM plan offers basic literacy, high school equivalency, and vocational and technical training; associate degree programs in community colleges; and degree programs. In addition, through letters of understanding, the auto companies and the unions have agreed that programs of labor studies are covered under the plan. Thus, a person may go to a university or college to learn how to negotiate with the company, or how to administer a union. He may study such things as parliamentary procedure, public speaking, written communications, and research, so that he will be able to resolve the differences between labor and management more skillfully. Management has

agreed to reimburse workers for this kind of education, in part because the union pressed for this provision, but perhaps in larger part because of management's growing awareness that two intelligent persons with different interests can resolve issues more rationally when there is trained intelligence on both sides of the collective bargaining table.

American Telephone and Telegraph (AT&T) also has a tuition refund program. In fact, it seems that most of the big companies in the United States have one. Some of the programs are under collective bargaining agreements and some are unilateral. IBM, which has no union, has one. General Motors, with a union, has one.

Another way that unions have negotiated education benefits is through a cents-per-hour educational and cultural trust fund. There are various formulae for building a fund: one per cent of payroll; one-half of one per cent of payroll, five cents an hour, one dollar a month per member, etc. For example, Local No. 3 in New York, under the leadership of Harry Van Arsdale, has a \$10 million, education and cultural trust fund which has developed over the years. The local's educational activity includes almost everything one can expect, including going to the opera; taking an educational trip to Puerto Rico; visiting the International Labor Organization (ILO) in Geneva to discuss financial affairs, political education, apprentice training; and college scholarships, not only for a union member but for his or her spouse and children. That union does not have to go to a private foundation to ask for a grant. It has its own foundation which it negotiated with the employer.

A third form of educational benefit is that of scholarship benefits for children of members. The Amalgamated Clothing Workers in the United States have negotiated a national agreement under which the companies contribute money so that the children of their workers can go to college. The Clothing Workers still believe, as most American workers believe, that the future is for their children. They continue to sacrifice their own educations in what they believe to be the interests of their children. Isn't it sad? Most adult educators in the United States do not know about this effort by garment workers. Isn't it sad that these people continue to believe that they must make this sacrifice for the next generation of their kind? Working people ought to be encouraged to believe that education is possible for them as well as for their children.

Let us turn now to the question of the practical use of available resources. One will have to do a little research in order to be able to find the resources. There's more than the proverbial gold in the streets, but the shame of it is, it's not being used.

Take as an example the tuition refund plan negotiated between the UAW and General Motors. Only one-half of one percent of those eligible participate in the plan—one-half of one per cent for blue collar workers. That's pretty low. Even if white collar workers and professionals are included, the total is a low 4 to 5 per cent.

Why don't the working people take advantage of their plan? Some of us are investigating that with NIE money and other kinds of money which is available. We honestly don't know the answer at this point. However, one obstacle to participation is clearly related to the matter of time.

If a person works eight hours or 10 hours a day in a factory, his or her chances of going to school at night are so slim that one comes up with the result described above. Therefore, in international bodies around the world—in the International Labor Organization (ILO), in the Organization of Economic Cooperation and Development (OECD), and in other places where people think—the idea of paid educational leave has been incorporated into conventions and recommendations. It is not a new idea. It is only new insofar as its application to working people is concerned. As we remarked before, most professors have a form of paid educational leave. College presidents, after some eight years, go off to some place to refresh themselves. (One of them went down and got himself a job as a dishwasher a short time ago and it was a surprise to some when he couldn't succeed.)

Workers need blocks of time away from their jobs if they are to develop long-term educational programs. Trade union negotiations often are conceived, aside from education, with the basic issue of time off the job in our heavy industries. Two minutes to slow the line; one minute to go to the wash room, another minute to do this, a half a minute to do that. There is continuing resistance to the pressure of keeping one's nose to the grindstone on the job. Thus, educational opportunity is related to "down time" in the same way. The current phrase is paid educational leave.

It took seven years for the ILO to come to some agreement on what, first of all, was the definition of paid educational leave. The ILO determined that paid educational leave means time off the job without loss of any benefits. Of course, one could have paid educational leave for everyone in the United States if it were recognized as a priority. Quite a few companies since World War II have provided it. Unions first negotiated educational leave provisions to give veterans a chance to go back to school. This educational leave without pay was practical for a veteran because the government was providing the GI Bill. Although companies were not asked to pay wages, some of them continued

health insurance, permitted seniority to accumulate, and provided part-time employment to people on leave.

Another form of paid educational leave in this country is that provided by unions to their officers and members. Twenty thousand American workers get time off the job, usually for one week in the summertime, to go to labor summer schools all over the country. They learn their job as union leaders better, as well as other things. The union pays lost time, wages, instruction costs, travel, etc. I think it is a shame that trade unions, out of their limited dues dollars, should have to finance the education of this very important sector of our society. Since it is clearly a process which enhances the public and private enterprise interests, it should be financed by private management as well as public funds. One has but to add to the above the great numbers of management training participants who are sent away to residential institutes.

Thus, we have a tremendous amount of paid leave in the United States, but we had never used that phrase until we heard it from Europe. Most people in this country have never had any substantive discussion on the subject of paid educational leave. In the United States, I think a half a dozen people probably did talk about it. Our delegates took a good position, voted right, and generally supported the concept. But other countries appear to have taken it more seriously.

The Swedes went back from the ILO meeting and passed legislation this January providing that every individual in their society is to have educational leave. If a person isn't permitted to have educational leave, he can take the employer to court. In 1970, the French labor unions and the French management negotiated a paid educational leave provision in their national contract and then, in 1971, wrote it into the law of the land.

The results of a 10-nation study of paid educational leave will be published this fall by the OECD. It will contain some specific information on trends in Denmark, Sweden, Belgium, the Netherlands, Germany, Italy, Yugoslavia, England, France, and the United States. CERI, the OECD Center for Educational Research and Innovation, developed the study in cooperation with the NIE.

Let's consider for a moment what working people might do if they were given paid educational leave. If we were to tell the working people in the United States that we had now opened up the doors of our educational system for them in a wide variety of new ways, but that we wanted them to take education for education's sake and not to improve their standard of living, as all the rest of us did when we went to school, I think that would be a terrible shame.

While it is valuable to learn things for learning's sake, and for social, economic, and political participation, and for cultural and spiritual values, there is no conflict between those objectives and improving one's standard of living. I think all of us have benefited from the fact that we have diplomas, or something that looks like a diploma. If the statistics really do show that there is little or no economic benefit to be derived from a college education as compared to a high school education, then we must reorganize our educational system in a hurry to relate the world of work and the world of education, so that working people will benefit from the efforts they make to obtain an education.

What we really need to do, if we are to provide opportunities such as paid educational leave, is to offer people incentives to participate in education. Like it or not, the adult educational system is based upon the ability of individuals to pay for the things they want. In a period of economic decline, schools may very well consider the needs of adult workers who can pay for services rendered.

The essence of the idea of paid educational leave is that an individual will be able to leave his job, spend a period of time studying, and then go back to a guaranteed job. It is possible that some companies will say, "Well, if I provide paid educational leave for my people, they'll get educated and they'll leave. They won't come back." Trade unionists have another way of phrasing the problem. They say, "If you educate him, he'll run against me."

So we find that education is a dangerous thing to someone in each walk of life. And yet, it's a useful thing to people who use it intelligently. If the Exxon Corporation provides fellowships for people to study for Ph.D.'s in some science-related field and some of them don't come back to the Exxon company, but go to the Mobil Oil Company instead, it sounds like a horrible thing: "We're training people for Mobil Oil!" That's true until you look at the statistics; you find that Mobil Oil also sent people to school, some of whom came back to Mobil, and the rest of them went to Exxon. In this fashion the whole industry is training itself and everyone is benefiting: the individuals, the companies, and the industry.

Current economic pressures are forcing Americans to reconsider their concepts and practices with regard to training and educational opportunities for workers and their families. Central to the development of strategies for the implementation of paid educational leave, recurrent education, and other educational opportunity programs is the forging of a coalition among the world of education and the two powerful giants of the world of work. All experience points up the significant role that

labor and management must play in any effort to implement work-related educational opportunity programs. Yet the American and European educational systems have so far been unable to relate themselves effectively to the educational needs of industry, labor unions, and the adult worker. Serious consideration of ways to accomplish this should be high on our agenda. Undoubtedly, coordination among all federal, state, and local agencies is essential to success, but the formal school system must be stimulated to carry its share of the planning and administration of the effort so that a full measure of educational opportunity will be provided to workers and their families.

In closing, let me suggest that: public funds should be invested in an effort to tap into the really

huge funds under-utilized but currently available in union and management educational opportunity programs. Public funds should provide training and educational facilities, including partial support to training and educational enterprises such as corporate training centers, union family education centers, and university, community, and state college labor and management programs.

Public agencies should take the lead in developing some form of national education and work council comprised of representatives of labor, management, and government, as well as professional educators who would concern themselves with the vast educational needs of the employed, unemployed, tenuously-employed, and under-employed workers and their families.



Federal Role in Assisting Institutions to Change

**Virginia Smith
Fund for the Improvement of
Post-Secondary Education**

Let's look at some of the new approaches and the types of new organizations for meeting the needs of diverse learners which have been submitted to the Fund for the Improvement of Post-Secondary Education.

One very clear example of changing trends in education is that of the brokerage. Some of our most successful types of new educational ventures are ventures which operate without a campus, without a large permanent faculty, and without a catalogue which is set in advance. They are moving from the notion of an educator as a facilitator to the notion of the institution itself as a facilitator, and those within the institution attempt to bring together the learners and the resource (or facilitator, or mentor, or teacher) for the purpose of providing the educational activity. These activities may be provided anywhere in the community, usually in existing facilities at the convenience of the individual. There are many factors to which this kind of

brokerage activity is responsive. One is the fact that if you are now dealing with older students, then those older students are not necessarily going to be interested in the organization of subjects and material that an academic faculty would determine prior to meeting with them. If, on the other hand, you have a faculty group that has the exclusive responsibility for providing the education, usually there is no other way to modify the offerings in a very large extent. One way to approach that problem is to start off with the assumption that you don't have a large permanent faculty, that you don't have a predetermined catalogue, and that you don't necessarily have mixed classrooms in six locations. You do, in fact, also respond to the energy crisis.

More important, you respond to the problem of bigness, since today over 40 per cent of our students are enrolled in institutions that have enrollments of over 20,000. One of the real problems is how to make that educational kind of experience a personal experience. A brokerage is one way to make it possible, because you usually have small groups of students meeting with faculty resources in the community, and, in some cases, with core faculty for the purpose of providing the educational activity in a dispersed site. Brokerage activity has a lot of problems that arise which must be handled on an administrative basis. What is the proper kind of relationship between the core faculty and all of the community resources? How much of a core faculty do you need before you can operate the institution on an on-going basis? As a matter of fact, some people who sit back and look at this process say, "Pretty soon you'll have a campus, pretty soon you'll have a large permanent faculty, and this is just a way of getting an institution started." They predict that as you develop you'll find you need a more permanent kind of employment group, and your efforts will move in that direction. The brokerage organizations are trying very hard not to do that. They find that with a limited type of permanent faculty member, a faculty member who is concerned with advising and facilitation as much with instruction, you will be able to have a large mix of faculty from the community, and from other institutions, working with the students.

Another organizational arrangement evident in many of our proposals is the new type of collaborative network. The liberal arts college that links with a private trade or technical school, for the purpose of providing the student a marketable skill and a liberal arts education at the same time, without creating a very expensive addition of vocational expertise and equipment within the institution, is an example. A number of these are being established across the country.

Other kinds of collaboration include those of an older model that involves a cross registration. We are just beginning to move into the field where we may have regional cross registration, that is across state lines. All of these involve a variety of questions about financing. There is one five-college consortium in Massachusetts that includes both private and public institutions. If you balance off the export students against the import students, and you find that you are importing more students at the low-cost institution than you are exporting students to the higher cost institutions, you begin to think that there ought to be some balance of payments going back and forth. And, in fact, some consortia with cross-registrations do have that balance of payments provision. Most collaborative networks haven't yet really met that question head-on, because there has been a fairly even flow. But if that flow gets tremendously out of balance, then you begin to have very serious financial questions. The kinds of questions that would suggest that perhaps there ought to be balance of payment mechanisms among institutions so that there would be a greater facilitation of cross registration and opening of options for students.

There are also arrangements that we are beginning to see between such organizations as museums and community groups. Many of us don't think of museums and libraries as very real post-secondary agencies, but they are. They are very rich in the kind of educational opportunities that they provide. Some of the adults view their educational opportunity as gained through various kinds of interest groups: through their church, their clubs, and (sometimes) directly with a special type of educational organization, such as a museum which is cooperating with one of their community groups. Some projects are arranged for the purpose of making that type of linkage. The other kinds of linkages have rather subtle sorts of consequences. A small project, designed to include many courses by community faculty, is brought into the institution for the purpose of teaching mini courses to students on campus. Then, perhaps, the program is expanded to offer the mini courses in the community. This has potential for tremendous counseling benefits, because the community faculty member is someone who probably is important in industry or government in the area. And he, or she, is in a position to talk with the students in that mini course about opportunities for employment, for internships, and for a variety of activities in the field. So the kinds of collaborative and linking arrangements discussed almost always have benefits far beyond the initial benefit for which the collaboration or linkage was formed. For that reason, it is an extremely fruitful endeavor.

The next type of collaboration is regarding a special solicitation strategy, and that is where most innovators find themselves somewhat isolated. If you are isolated to some extent, the degree of your innovation can be tested by two factors. One is whether you can easily communicate it to someone else, or, instead, having communicated this tremendous innovation, they say, "We have been doing that all along, and you know you haven't described what it is that you are doing." The fact that there is no language to really talk about your innovation is one test of whether or not you are being innovative, in the sense of putting something new in place.

Another test regards how many people you can identify quickly who could teach you something about what you are doing and could provide information to you that would be helpful in the furtherance of your project. We find that many innovators are quite isolated, and that it is very helpful if networks are built for two purposes. One is so that they can better understand what they are doing, and perhaps develop new ways of evaluating their accomplishments. One major obstacle to a clear analysis of the situation is this: the evaluation designed by a researcher to answer questions which the practitioner never asks, and the data used for the purpose of answering those un-asked questions is data that was never designed into the project in the first place. The result is that the evaluation of many types of projects of that sort concludes there is no evidence to indicate that there are positive results from the project. This is usually translated to say that the activity does not work. What it really means is that there is no data to indicate that it did or did not work in terms of the data designed by the researcher (that is, the data questions asked by the researcher). So, in a collaborative network, a project is viewed as working and, over a year's time, we design new approaches to evaluating its elements, so we can begin to talk about other dimensions of working or not working. We feel this type of evaluation is much more valuable than the usual researcher's type of comment that "There is no conclusive determination on this project."

In other words, very few people really want to know all about any project. Very few projects are totally transportable into another setting. They're partly a creature of the history and personalities within that setting.

But if other practitioners know the elements of this project, and others like it, and if evaluation guidelines are based on the type of questions practitioners are likely to ask, then they can take a whole group of projects and find if there are any useful kinds of information that might answer

their questions. That is one purpose of the collaborations.

A second purpose of the collaboration is to provide this reinforcing network process and an advocacy base for innovators. To some extent, the innovator needs an advocacy base for a lot of purposes. Almost every state budget formula is based on credit hours or certain definitions of students, which are, in turn, defined by credit hours. Budgeting and allocation of resources comes only in that fashion. If you want to be an innovator who does not want to use the credit hour as a unit within your program, you may find yourself forced to distort your program, just to get funding. An important thing that the advocacy group can do is to meet with policy makers for the purpose of identifying problems of that type in order to, perhaps, make some shifts in the policy that would accommodate their possibility for improvement while not destroying the usual base of funding for the traditional types of activities. A lot of those problems need to be identified. As a matter of fact, the Fund is supporting a conference designed to look at various types of programs and to determine what problems are created by the interface between those programs and traditional formulas for public financing.

I believe that, in addition to the types of collaborative and brokerage activities I have mentioned, we may find ourselves moving into a rather traumatic situation. We have had faculties at many of our institutions for many years who have viewed their students as available full-time for what really amounts to as part-time activity. This permits a faculty member, who is full-time, to consider his availability required only part-time. Because the activities can be scheduled at the convenience of the faculty member. It has been this kind of arrangement that has permitted faculty members to continue professional development of much-needed activity during the school year, to continue various kinds of organization of materials, and a variety of other things. In our experimental activities dealing with part-time students, adult students, students of that type, we find shifts take place: that you have a student body which is available part-time and wants to pursue a full-time program. The faculty, if it is full-time, has to be available more than full-time. The fatigue ratio in an innovative organization is very, very high. Faculty members find that they are working much longer hours, not in terms of the range of activities that faculty members do, but in terms of those activities that require them to be in particular places at particular times. This shift, over the next two decades, is going to be an extremely important shift in the working conditions of faculty members at

large numbers of institutions. The problem may well be based on how you can distinguish among those institutions that absolutely require the old pattern for the purpose of maintaining the kinds of activities in which faculty members are expected to engage, and those that do not.

To what extent will the model of work which is viewed at some of the independent-learning, self-paced, credit-free, space-free colleges have impact upon some of the more traditional colleges that are comprehensive colleges, state colleges, and some of the state universities? The answer to that lies, not in how persuasive an example is set by the innovative colleges, but in how much those other institutions want to dip into the new sources of clientele. That change will have to come if the state institutions and the comprehensive colleges wish to gain

more in the way of learners who are demanding much more flexible schedules, and much more freedom from space requirements. Who are demanding, in fact, that programs be designed at their pleasure, at their convenience rather than at the convenience of the faculty. That is the thought with which I would like to leave you because it is one which I find the most traumatic of all the indications that emerged from the fund projects I reviewed. It is a traumatic thought in that it requires special attention early in the operation, or we may find ourselves in a situation where faculty as a resource for more than instruction is largely endangered. In that situation, faculty members would still be an excellent resource for instruction, facilitation, and a variety of other things. But they could lose some of the other dimensions of themselves as a resource.

Management and Financing Patterns

**Myron Wolowitz
Veterans Administration**

Shortly after the enactment of the current GI Bill in 1966, it became evident that some colleges and universities were offering nontraditional degree programs which did not fit into the molds the law provided for measuring for payment purposes. The Veterans Administration (VA) at first treated such programs on an individual basis, deciding case-by-case how a school's nontraditional course would be measured for payment purposes.

As such programs began to proliferate, it became clear that guidelines should be established for the payment of VA benefits for enrollment in non-classroom studies. The task of establishing general guidelines was complicated by the variety of ways in which educational institutions varied their program from the traditional. What was common to the programs we were looking at then was the absence of provision for classroom instruction for the entire enrollment period. But from that starting point, the programs took off in all directions. Some did not require the student's presence on campus at any time. Others required brief seminars on campus, usually during the summer. Some required course completion within the regular semester or quarter, while others were organized on a calendar year basis, and still others were open-ended. Some granted credit in the usual semester or quarter hours, while others abandoned this concept. The degree of faculty-student contact also saw wide variations. Schools described their programs in different ways, but the terms "independent study" and "external degree" came to be widely used.

The appeal of such nontraditional programs appear to be directed to those students who were unable to pursue higher education in the traditional way, mostly because of conflicts with employment. It was therefore apparent that the kind of nontraditional programs we were looking at were part-time in nature, although of course full-time pursuit was possible. Since payment of an educational assistance allowance is based in part on training time, we were faced with the problem of determining training time criteria for nontraditional programs which would, at the same time, fairly represent the actual training time and also be consistent with the training time criteria established in the law for traditional programs.

The initial guidelines that developed were, of necessity, related to standards in the law for traditional or classroom programs. From the beginning we ignored any fine distinctions in terminology, and for VA purposes used the terms "independent study" and "external degree" interchangeably. Our first guidelines, which were not regulatory, provided that where a course was organized on a semester or quarter basis and credit was granted in terms of semester or quarter hours of credit, such courses would be measured the same way as courses given in the classroom mode. However, if the course were not organized on a semester or quarter basis, or if credit were not evaluated in credit hours, payment would be limited to the less than half-time rate which is the payment of tuition and fees, not to exceed the half-time rate for a veteran without dependents. These guides applied only to degree programs offered by accredited institutions of higher learning.

The first VA regulations governing independent study were adopted in November of 1973. These were largely based on the guidelines which had developed over the years, but permitted payment at institutional rates for courses offered on a semester or quarter hour basis, provided the school could furnish a beginning date and at least an estimated ending date. A further liberalization brought college correspondence courses creditable toward a degree under the independent study umbrella.

The Veterans Administration was attempting to keep pace with educational innovation, and to provide benefits to enrollees in independent study programs on approximately the same basis as traditional programs.

Shortly after the publication of independent study regulations, it began to become apparent that a small minority of schools were finding ways to make their programs attractive to veterans solely on the basis of the VA benefit. What made the programs particularly attractive was the possibility of receiving full-time benefits for attendance or study on a part-time basis. Declining enrollments in traditional programs, coupled with increasing financial pressures, were causing some schools to look to proprietary non-college institutions for solutions. For example, a state university in the Midwest entered into an arrangement with a proprietary correspondence school to jointly offer a degree program. In less than a year, using the correspondence school's sales force, more than 10,000 veterans were recruited and enrolled at a cost of approximately \$2400 each per year.

The VA began receiving complaints from veterans and educators. In addition, those Congressional committees which have VA oversight ex-

pressed great concern that we had gone far beyond what Congress had intended. The revised independent study regulations, published in December of 1974, were the result.

The principal change made was addition of a requirement that the major portion of the credit hours must be offered by classroom or laboratory attendance, or the course would be measured on a less than half-time basis. Another major change provided that where a school contracts with some other entity to provide all or part of the training, benefits are paid at the rate appropriate for the entity actually doing the training. It is also made clear that the faculty must be the regularly employed faculty of the school. Other provisions in the revised regulations made regulatory principles which had been applied administratively from the beginning.

For example, we have always held that there can be no "pursuit" of a course under the GI bill unless there is instruction by a teacher. The independent study regulation now requires interaction between student and teacher, either by mail, telephone, personally, or by class attendance.

Although, under the previous regulation and the guidelines before it, there was a requirement that an independent study program be one offered by an accredited college or university, there was some misunderstanding about what constitutes accreditation. The revised regulation now specifies that full accreditation by one of the regional accrediting agencies is required. Candidate status, or accreditation by a specialized accrediting association, is not qualifying.

Although the innovations represented by non-classroom programs has been a source of some difficulty, other, less obvious, innovations also have produced problems for the VA.

As you know, the VA pays the veterans and other eligible persons an educational assistance allowance for enrollment in and pursuit of an approved program of education. Changes in educational philosophy on the part of traditional institutions have also produced some reactions. For example, many colleges and universities no longer require classroom attendance. In many instances students are permitted to withdraw from courses right up to the end of the term. Many schools have no requirement as to academic progress, while still others do not take into account courses in which the student did not receive a grade. Most students are retained in matriculated status even though they are making little or no progress toward their degree objectives.

Let me make it clear that the Veterans Administration has no quarrel with the educational philos-

ophy underlying such practices. However, these practices do enable individual veterans to continue to receive VA benefits even though they are not, in fact, pursuing their programs. You might well ask why the VA does not summarily remove such individuals from the payroll. The answer lies in the law itself, which directs that the allowance of the veteran be discontinued if his program is unsatisfactory according to the regularly prescribed standards and practices of the educational institution. Thus, you will see that the law does not permit the VA to establish its own standards of progress, but requires us to rely on those of the school. We are, therefore, seeking the cooperation of the schools and the state approving agencies to establish standards of progress that would eliminate the potential for abuse in this area.

There was published, in the Federal Register

of May 27, a proposed regulation which would require state approving agencies to impose meaningful standards of progress as a condition of approval. Schools would be required to report to the VA whenever a veteran failed to meet the standards of progress. In such case, the VA, after counseling with the veteran, would determine whether or not the payment of benefits should be continued, even where the school retained the veteran as a student.

Again, it should be emphasized that the VA is not critical of the educational theories, policies, and practices of the schools, but we are attempting to cope with an obsolete set of rules. The current GI bill was modeled on the Korean Conflict GI bill, which was enacted some 23 years ago. The simple fact that the law has not kept pace with the changes in education accounts for the difficulties the VA now has with nontraditional education.



Michael D. Neben is chief of the Educational Television Programming Branch of the U.S. Office of Education. Mr. Neben brings to his present position a variety of educational and work experiences. He has served as an announcer and news director for a commercial radio station, followed by a staff position as acting director of radio and television for Northeastern University in Boston. In 1966 he became executive producer of educational programming at WHDH-TV-AM-FM in Boston and was responsible for the creative development and production of the Ohio State two-time award-winning "Classroom Five" television series. Since 1968 he has served as a senior program officer in the U.S. Office of Education with responsibilities for media activities

Government Concerns and Policies: Current and Future

**Michael D. Neben
U.S. Office of Education**

It is a generally accepted custom to begin a presentation with some kind of story or joke, and I had thought long and hard about the kind of story that would be appropriate for my presentation when the comic pages of the *Washington Post* solved my problem. What could have been more appropriate than the Little Orphan Annie comic strip in which Annie and Daddy Warbucks are talking about television, as they watch Punjab talking to them from Singapore on a large wall screen TV set? In the next frame, they are eavesdropping on Boris Sirob. And, in the last frame, Little Orphan Annie says, "Leaping Lizards, did he mean he can see us too?" And Daddy says, "No, Annie. He could if he had the same sort of apparatus we have, but no one outside of my own organization has one of these yet." Now, what struck my fancy was that this comic strip originally appeared in 1937, as it was written, which means that Daddy Warbucks held the secret to interactive

two-way television with large wall screens 38 years ago. That probably best summarizes everything I have to say in this presentation.

From time to time, a little phrase goes around Washington—the words "new and exciting"—and, for those of us who take the time and effort to look beyond the words, it usually is apparent that what generally is being referred to is neither new nor exciting. I have a very deep interest in semantics and the use of words, and I find it very disturbing when things are mislabeled that way. So let me encourage you, in dealing with the field of nontraditional education, to accept as your own by-word "Tell it like it is."

What is nontraditional, for example, about a professor lecturing to a class? I don't think anybody here would say that anything was nontraditional about it. Does the televising of the lecture and the distribution of that class over cable television suddenly alter the traditional relationship between the teacher and the student? Sure, it alters it, but does it improve it? Does that make it nontraditional? While we are on the subject of breaking down tradition, or modifying it somewhat, what is the time length of the courses that are being offered in Psychology and Accounting out of SUN? I don't have the exact time length at the moment, but I'll take a guess based upon some prior knowledge that they are approximately 28 minutes and 30 seconds. What tradition dictates the time span of 28 minutes and 30 seconds for these nontraditional offerings? Why not 19 minutes and 42 seconds, or 42 minutes and 19 seconds? Or did I miss the point of the term, "nontraditional?"

The point of my remarks is simple: I think that the education consumer is overdue for a truth-in-packaging law. I won't pursue that any further, except to say that I think one of the functions of the government at any level, and at any agency, is to protect the education consumer from the venerable phrase, *Caveat Emptor!* I would only suggest that if we are going to package old wine in new bottles, let's make sure that both the product and the packaging are worth the effort. I would like to see us move away from a situation where we cannot separate innovation in substance from innovation in nuance, where we would not become addicted to the inevitability of a throw-away society. Possibly, the best summary is on a sign on my office wall which says, "When you begin to see some light at the end of the tunnel, step back a moment and ask yourself, were you in the right tunnel?"

We say we are breaking traditions and we can point to the 28 minute and 30 second example of

apparently maintaining traditions. At what point, at what level in the whole spectrum of activity, is it worthwhile to attack traditional activities if we really want to affect some improvement? Maybe that is not really worth even worrying about.

I think that what we are saying is that the 28 minutes and 30 seconds is there for the entire package. The reference to 28:30 is meant to be a metaphor.

There is also a point of rhetoric with these projects, and I warned you that I am a semanticist. One is reminded of some of the rhetoric of the recent experiment of the Rocky Mountain satellite. It was going to solve all the social service delivery problems and heal all of the social ills... and it produced one half-hour show once a week for a half million dollars.

It is very difficult for me to pin my skepticism of "new" educational programs down to specific terms. It might be illustrated by that satellite 22,300 miles up that is delivering only a half-hour a week of new programming for a multi-million dollar investment. It is somewhat the concept of "Why is open circuit television the chosen medium for certain types of activities?" There is a certain sex appeal that gets hung onto anything that has television as its delivery medium. But television is not the best medium for all things. I can give you a very specific example, and then I'll stop. There has been a lot of talk about the need to create an adolescent *Sesame Street*. That just turned me off right away, because I didn't know what they meant by "a *Sesame Street*" to begin with. Were they using that as a euphemism for high-quality, well-produced, expensive programming? If so, as a television producer, I was taught that these characteristics should be the norm, not the exception. Or were they talking about the characters and the techniques and so forth? If so, what makes them appropriate for an adolescent audience? We get into that kind of rhetorical posture with regard to nontraditional education. *Sesame Street* has become the peg upon which we hang so many things that are "nontraditional." When you boil that whole thing down, we recommend that the best thing to do is forget about a television program for adolescents entirely and think about the medium to which they are attuned and that is radio. What's more, it shouldn't be done in half-hour programs, but in three and four-minute modules. And don't send it to public radio, send it to Rock and Soul stations. Now, you are talking about nontraditional education. When you really get down to that finite level of thinking, then you are going way beyond what I call the "*Sesame Street* kind of discussion" syndrome.



Government Concerns and Policies: Current and Future

**Jim Stengle
National Library of Medicine**

I am primarily a doctor, and only recently and secondarily a communications man. I got interested in communications because of what I thought it could do for medicine.

In our shop, we are interested in research and development, and demonstration and evaluation of communication systems. Our whole philosophy is that education is problem-solving, medicine is an artisanship, and the whole substance of medicine is the solution of medical problems in an individual or in a society or group. Our orientation is to problem-solving. In order to solve the physicians' problems we feel that you must find out what those problems are, and take the direction in the substance of your educational program directly from the man who has the problem. That is the main thrust and the direction of the philosophy. We further feel that any educational system ultimately must pay for itself. This is a test of its validity and

of its value. If it is good, it is going to be appealing to the student learner, and our whole effort is in the direction of service to the learner. We want to deliver to the learner the information that he needs to solve his problems. In other words, for us education is a means to an end rather than an end in itself.

The particular problem in our shop is that we need to reach a public that is scattered all over the country, isolated from educational institutions. The job of basic medical education is going on in the medical schools, but primarily we are interested in the continuing education process. We are interested in the process of updating, reinforcing, or adding to the fund of knowledge of the practicing health professional. And the promise of telecommunications systems, computer-assisted instruction, and television systems is very great as a

means of supporting the lifetime of learning so necessary to maintain professional proficiency. It translates into better health care for our population.

What have we learned through the efforts that have been made in the national library of medicine that is transferable to the rest of education? What kind of experience indicates that the various facets of the information system in your continuing education programs will pay for themselves?

The painful process of evaluation is taking place. The withdrawal of federal support has been done in a phased way, so that it is not too great a shock, but both of the systems of which we are speaking are picking up the tab and going on to continue and expand these regional, interactive telecommunications systems which are carrying educational programs in continuing medical education.



Justine Farr Rodriguez is special assistant for Inter-agency Affairs to the Secretary of Health, Education, and Welfare. She works to facilitate communication between HEW and other government agencies on matters of common interest. Reflecting the Secretary's long enthusiasm for the educational potential of television, Ms. Rodriguez has been working intensively in recent months to improve coordination among the agencies involved in the delivery of education, health, and social services by telecommunications. In this context, she has given particular attention to stimulating long-range planning and discussion of the roles and relationships among the agencies participating in the development of the various education telecommunications media.

Government Concerns and Policies: Current and Future

**Justine Rodriguez
Department of Health, Education, and Welfare**

Not only have I not been a specialist in telecommunications, I haven't been involved with it for terribly long. One of the nice things that I've found, as I've gotten into it, is the relationship with the people who are interested in it, because I've found them to be usually optimistic, innovative, and farsighted. I think this is the reason they've accomplished so very much.

I'm going to call upon those characteristics at this point because, from my perspective, it's time to look ahead again. I find telecommunications is an area where a tremendously long lead time is required. A lot of capital is involved, a lot of time is necessary to relate new things to all of the systems to which they should be related, to get legislation through, and what have you.

So we should look fairly far ahead in thinking about what we'd like to evolve toward. I know that there is evidence in education that if you can articulate clearly where it is you'd like to go, your chances of getting there are improved very considerably. Now, of course, the development of educational telecommunications is a matter of evolution and should not be pin-pointed in advance. But it is important that people in educational telecommunications discuss how it should develop because this is not something which HEW or the government is going to decide. It requires a collaborative effort, public and private, and involves a lot of groups, some of which sometimes cooperate and some of which haven't had long experience in cooperating.

I'd like to discuss four different systems into which educational telecommunications fits. The first of these I call the **learning system**. I've seen evidence showing that television can be as effective as face-to-face teaching in many situations. I've seen programming that has gone beyond just the presentation of a lecture into something that only television can possibly develop. It seems to me we ought now to turn again to research and, with an eye to the future, stop comparing television to face-to-face teaching. There is sort of an underlying assumption here that teaching and telecommunications are substitutes. My question is, "What is the relative advantage of television? Is there something, or are there several things, unique that television can do?" And I've seen hints that there are, in fact, unique things that television can do. I've seen studies showing that multi-media presentations are more effective than a single media, and that's not so new because we've always used books and teaching so you get knowledge through your eye and your ear. But it seems to me we're learning more and more about the specific advantages of specific technology - computers for drill, television for bringing the world in, television for meeting the unique individuals in the world, for learning affective skills and psychology, and for seeing yourself in action in some athletic pursuit and then trying to improve your capabilities. So it seems to me that educational research - perhaps much more in the context of specific subjects than it has been - should be exploring what specific combinations in media are most effective for a specific subject in a specific situation. And the role of the teacher, in terms of nontraditional learning, will be as an organizer of some of these situations, serving as a discussion leader, as a coordinator, and in various other roles that the teacher has not predominately played so far.

The second system that I see is the **educational institutions**. Who is it that we will be educating in the future? What kinds of education will we be pro-

viding for them? Bob Andringa referred to all of the corporate learning that's going on. He mentioned 18 million people in formal training courses in business, museums, libraries, and YMCA's. And the question is, "What relationship should the universities and the educational institutions have with this other system?" As more adults came into the educational world we asked them, "What do you want to learn? What stops you from learning more?" One of the things they've said is it takes too much time. Now, they may mean this in two different ways. They may mean, in fact, that they don't have time to go from their everyday life to a university. Maybe one of the answers is bringing the university to them. Or they may mean that it takes too large a block of time at one time to get a degree and maybe the answer is giving them competency certificates that then add up to a degree. We should think about these kinds of things in systems terms.

Then I see both the **public broadcasting** and the **non-broadcast media** at the stage of thinking ahead as to where they want to go. As to what is the most appropriate role for public broadcasting, a key question is: what educational material do you want to reach lots of people in their homes? Pre-school education, teaching people about being parents, programs designed for elderly people who will not come in to the centers, etc., are possible examples. What roles can each medium play particularly well?

All of the non-broadcast technologies must be considered together, somehow. How do you use each of them, and how do they fit together? What relationship should they have to broadcasting? Will the public broadcasters turn into production centers and produce some of the programming that will be needed for cassettes, schooling, and instruction through the non-broadcast media? Will the broadcasters be the "head end" of some of these systems? Will they be the center of some of the telecommunications planning in a neighborhood or region? These are the kinds of issues about which we must think ahead and have some discussion on, so that we in the federal government can, in our own decision making, move in the direction that the public consensus wants us to move.

One question asked is, "What can the federal agencies do to help progress in some of the recommendations that the Commission on Non-Traditional Study has already made?" For instance, one of the recommendations which that commission made was that there should be a shift of emphasis in colleges and universities from degree granting to service to the learner. What are you going to do, Feds? That seems to be an appropriate question. There is the general question also: What should the role of the federal government be in trying to promote progress in the educational enterprise?

Should they just deal with what is, or should they help us to answer such questions as what should be in American education? More specifically, do the present HEW policies help or inhibit the non-traditional movement? Are there some mechanisms that the federal government, and specifically the Department of HEW, has that will assist us to achieve some of these open learning objectives that this conference is all about?

We need to know something more specific than we do in order to know where we may be hindering or helping an emphasis on the learner. We are sympathetic in principle, but I don't think the definition of service to the learner is quite clear yet, at least not to me. Any government action would require cooperation with the private sector, because we would need tools, for example, specific assessment procedures, in order to effect such an emphasis on the learner. Another question asked is, "What move might be possible in the field of student aid...what is considered desirable, what we can expect, and what we should do to generate some action?"

I think Bob Andringa started that discussion very well. He said, "What are the implications of financing part-time study? Do you fully realize that if we go in that direction, you are going to have to be sharing federal support with other providers of part-time education? If there is a revenue pinch, what does that mean to you?" It comes down to a question that the Congress and some places in the administration get asked constantly: What is the federal role? If it is to help those with low income, then Bob's answer has something to be said for it, namely that if you're working you can usually afford to take a few courses on the side. If the federal role is something else, if it is support for innovation, then make some projections to show that, if we want this kind of open learning system, it can't be financed by the standard methods. Give us some information to show that the system would be completely transformed, and to show where you think the system of nontraditional education is going to go, and why the current financing mechanisms won't continue to support the system.

Academic & Curricular Patterns

This conference theme focused on the academic and curricular patterns emerging from ongoing open learning and non-traditional study programs.



William B. Bondeson is currently serving the University of Mid-America as vice-president for Academic Affairs. He came to Nebraska as an American Council on Education Fellow in academic administration, on leave from the University of Missouri. Before coming to Nebraska, Dr. Bondeson was the chairman of the University-wide task force on the Open University. He was also the director of the College of General Studies and a professor of philosophy at the University of Missouri. Dr. Bondeson graduated from Augustana College and received his master's degree from the University of Illinois and his doctorate from the University of Chicago. As a scholar of Greek philosophy, he brings to open learning a unique insight which combines ancient tradition with modern innovation.

Open Learning: Curricula, Courses, and Credibility

**William B. Bondeson
University of Mid-America**

Nontraditional study and open learning are probably the most systematically ambiguous concepts in the history of higher education. Marvelous as the ideals they express are, they come with a logician's problem attached to them, and that is the problem of negative terms and negative definitions. To define something as not something else is not really to say very much about it, except by contrast. To say that something is not red leaves the entire remaining range of spectrum as a possibility. Thus, any discussion concerning the curricula, the courses, and the credibility of open learning or nontraditional study must begin with some general comments which attempt to define what such a program can be. I offer the following as some general characteristics of such programs, realizing that some things will inevitably be left out in any such attempt at a definition.

Open learning and nontraditional study can be defined in part as a program or programs which attempt to deal with a student age group older than that found on a traditional college campus. One of the main target populations of these programs is the student 25 years of age or older, in many cases with a year or two of college work but in almost all cases without a completed degree. Insofar as open learning deals with people who have already established life styles as well as job and family commitments, this means that open learning programs can make higher education more accessible to students who are not able to come to a campus, even for evening classes or weekend study. Many studies have shown that there are potential students whose work schedules are such that regularly scheduled campus-based classes are an impossibility for them, and thus a key feature in the design for open learning programs is sufficient flexibility to enable the student to study at his or her own time, place, and pace. In this sense, to make higher education more accessible is also to individualize it. Thus, adults are the prime target population, accessibility is the key term describing the methods of delivery and instruction, and alternatives to traditional curricula describe in part, at least, the contents of nontraditional study programs. Research has shown that some nontraditional students want to take courses not usually found in traditional campus catalogues, e.g., personal skills courses, vocational courses, and the general range of non-credit offerings. But it would be a mistake to assume that all nontraditional students want nontraditional programs of study, at least in terms of content. Research has also shown that there is considerable and sustained demand for traditional subject matters which may or may not lead to traditional degrees. Thus, the content of open learning programs can be as wide and varying as the needs of the students who enroll in them.

But to talk about nontraditional methods of delivery and alternatives to traditional curricula is to make a distinction, albeit a very rough one, between content and delivery. To take the delivery side first, an open learning program can use a non-traditional method of delivery to enable its students to learn perfectly traditional subjects and to earn perfectly traditional degrees. The Open University in the United Kingdom, a truly superb program by anyone's criteria, is the paradigm case of such an effort, combining what we in the United States call basically a liberal arts curriculum with a delivery system using, among other things, multi-media courses and a network of learning centers. This combination works very well indeed. On the other side of the scale, Empire State College in New York has developed a network of learning centers through which students can pursue degrees by

completing learning contracts. These degrees may be either rather traditional in content or of unique, inter-disciplinary kinds. The delivery here is non-traditional, but the content can be either nontraditional or traditional.

The point I want to make is simply this: given the general definition of open learning and non-traditional study I have sketched above, and given the rough distinction between content and delivery just mentioned, there is no such thing as an open learning curriculum, and there shouldn't be either. Nor is there any single design for course development, needs assessment, faculty development, or financial support. And there shouldn't be, either. After all, the title of that great gospel we all quote is *Diversity by Design*, not *Unanimity by Accident*. The curricula, and I stress the plural, should be as diverse as the learning needs of those students who pursue them; the courses should be as variegated as are the learning styles of those who take them. The media should be as multiform as the life styles of the students who tune them in, push the keyboards of computer terminals, or can only study when the midnight shift is over. Thus, open learning is characterized by flexibility and by accessibility and an accommodation to the variety of learning styles.

But, and here the caveats will begin, we should not be captured by the false rhetoric, too often prevalent in the literature of open learning, of "meeting learning needs." (Nor should we be captured by the equally false dichotomy between being "learner-centered" on the one hand as opposed to being "content-centered" on the other.) It would be a mistake of the first order to try to satisfy just any learning need that may be identified. Human beings want to know many things (and at many times and places) which are simply inappropriate or even downright immoral. Believing that the doctrine of original sin is not without application even today, I can say *a priori* that many people would like to know how to "improve" their income tax forms so as to reduce their payments; many people would like to know how to use the techniques of persuasion to "make the worse argument appear the better" (The Sophists in fifth-century Greece claimed to teach the very same things), and many people would be delighted to learn how to apply all kinds of chemicals to the land without any warning or additional instruction about their environmental consequences. Many people would like to know calculus without first going through the rigors of analytic geometry, and many people would like to know how to write without the discipline of grammar. This is to say that disciplines have structures and orders, that degrees usually have rationale for their requirements and, most important, that edu-

cation is an inescapably normative activity. It would be an immoral vision to believe that all learning needs could be met.

The question, "What knowledge is most worth having?" is as good a question now as when the Greeks first raised it. And it puts the challenge to anyone who wants to develop an open learning program quite bluntly: What, of all the range of courses, curricula, methods of accreditation, counseling and evaluation techniques, the various media, and the personal and intellectual resources at your disposal, will be used in your program? Or, in another way, of all the learning needs—for vocational courses, for basic skills courses, for non-credit experiences, for traditional subject matters, for upper level and graduate courses, for professional educational courses, for continuing education courses, and heaven knows what else—which finite segment of these learning needs do you choose to meet (and why?). Universities struggled, in my judgment, through the 1960's trying to be all things to all men! I would hope that we now realize that to be an impossible vision and that we cannot, even with open learning programs, solve all of society's problems and be church, parent, teacher, custodian of the young, and whatever else might be required.

If there is no single curriculum or course of study which an open learning system ought to develop, are there any very general characteristics which such a program should have? For purposes of this discussion, I am assuming that an open learning program or a nontraditional study program is attached somehow to an already existing institution of higher education or combination of such institutions. With these assumptions in mind, I would propose that there are two very general characteristics, related to the definition of an open learning program which I mentioned above, which should help describe such programs in greater detail.

First, the courses, the programs of study, and perhaps even an entire series of degrees are made available to students using as many of the variety of instructional media as are appropriate to the content and goals of the program, in order for students to have access to these courses and programs of study without the necessity of regular attendance on a college campus.

Second, a network of learning centers should be established to which students may come for educational services of all kinds. Among the services which could be provided are: educational counseling and referral services which put the students in touch with all the educational opportunities in his or her city, county, state, region, and nation; ad-

vice and counsel in the choice of programs of study; faculty help and support with work on particular courses and in the development of programs of study; and, in general, easy access to the entire range of available courses, programs, and degrees in the related institutions of higher education. This access may well include the use of educational television stations, educational radio stations, correspondence materials, external degree programs, and the use of such other technological capabilities as the computer.

Probably the key element in an open learning system or open university program is the personal contact the student can have through educational counselors and faculty mentors. In a very real sense, these people are the curriculum of an open learning program. It is their function to help the student articulate what he or she wants to know, to discover the appropriate resources for satisfying those needs, and to provide the proper amount of advice and guidance in the choice of courses of study and in the development of degree programs. To believe that technology alone will increase accessibility is to pursue an important, but incomplete, notion. To develop open learning programs solely based on multi-media courses without the necessary personal and human support is to overlook a human need perhaps more fundamental than the need to know.

I am assuming that an open learning system will be somehow connected with and related to universities and other existing institutions of higher education and, as such, the range of courses and programs should be co-extensive, at least in the initial stages, with already existing courses and programs. This is not in the least to preclude non-credit and other similar forms of study; it is simply to say that planning for an open learning delivery system in a city, region, or state should begin by asking two questions: What is the existing range of courses, programs, and degrees which are currently available? And, given the development of a network of learning centers staffed with appropriate personnel, how can these courses, programs, and degrees be made more accessible to the learners in that area?

The development of an open learning delivery system as sketched above will require the development of persons to fill the roles of learning center faculty and staff; it will also require research on the learning needs of students in the region where it is to operate; and it will require the development of a budget based on charges for courses and credit, but also based on charges for other learning services, including counseling, evaluation, testing, crediting for prior learning experiences, use of course materials, etc.

And this brings me to my final topic. As I mentioned, I operate on the assumption that an open learning system will be related, in some sense, to an already existing institution of higher education. I believe that this assumption is sound, valid, and normative. First, such systems, in my judgement, will be made the richer and the more diverse for their connection with existing institutions of higher education because they will put learners into contact with a greater spectrum of learning resources than if they are set up as independent, and competing, entities. I am also conservative enough to believe that working through existing institutions, if the arrangements are properly carried out, can make the learning experiences offered in an open learning system of a higher and more rigorous quality. The argument is often made that such programs should be set up as competitive operations, with the supposedly good educational offerings driving out the supposedly bad. (The rhetoric is unfortunate: calling nontraditional study "open" learning is to make the implicit contrast with traditional study which must of necessity be "closed" and therefore bad.) Thus, I am arguing that open learning programs should be integrated into the total range of higher education programs in order to assure a higher level of quality, credibility, and respectability.

Second, although such programs are more than justified on the grounds of the new kinds of students being served and on the very desirable notion of extending the educational franchise to all segments and ages of the population, there is an additional benefit which I hope would result from them, even on the most traditional of campuses. I would hope that through the design of multi-media courses, of individualized programs, of improved access to information through technology, of modularized courses, of making available the entire range of personal learning services, that instruction on additional campuses, as well as that in nontraditional programs, might be improved.

Thus, the argument for nontraditional study rests on two foundations: first, on what can be done for students not previously served or not served well enough, but second, on what such programs might have in the way of extra benefits for campus-based traditional programs.

And this raises the basic questions of how to design such programs so as to be creditable and acceptable. In the most general terms, how ought nontraditional study programs and open learning programs be related and coordinated with the already existing programs of institutions of higher education? I believe that no one will argue that this is the great depression in American higher education, that enrollments are declining, that budgets

are shrinking, that there is an oversupply of faculty members for a limited number of jobs, that all kinds of external state and federal agencies have come into existence to administer, regulate, and control higher education. Any one who intends to develop such a program should be prepared to deal with the following academic problems and realities. (I am not claiming that any of the points listed below are justified; rather they are real perceptions and problems with which any open learning program must deal.)

1. The number of faculty members who do not understand, nor even appreciate, the necessity for such programs is enormous and by far the dominant majority on almost any campus.
2. The belief that campuses and classrooms are essential components, and possibly the only components, in an educational system is very widespread.
3. Open learning programs are viewed as directly competitive with campus-based programs.
4. They are also viewed as competitive with already established "nontraditional programs," such as Extension, Adult and Continuing Education, and similar programs.
5. Multi-media course packages must be approved by existing academic groups, and they are usually subject to the "not developed here" syndrome.
6. Any program which has no established admission standards must indeed be suspect.
7. Because of the personal and/or technological character of such programs, they are usually viewed as extraordinarily expensive, and therefore in direct competition for shrinking budget funds.
8. Faculty are often reluctant to play the new role of the mentor, the educational manager, and the open learning counselor. Such an activity is something for which none of us were prepared. (And, I might add, none of us were prepared to administer such programs either.)
9. As with any new program, and particularly in difficult times, there is an inordinately large burden of proof upon those who would establish such programs. Thus, the research and evaluation side of these programs must be stressed, and this does little to lower the costs.
10. A reward and evaluation system must be developed for those faculty and adminis-

trators who play the new educational roles mentioned above.

11. Faculty morale is always a problem in such programs. How can the faculty in an open learning system carry out their new educational roles while at the same time maintaining contact with their more disciplinary-based colleagues?
12. The financial problems are considerable. If existing financial support is based largely upon student credit hours produced or on some other head count kind of formula, then it becomes necessary to find ways of supporting and charging for other educational services not related to the production of credit. Thus, a great deal of imagination will be needed to convince all kinds of fund-

ing sources that the entire range of learning services must be supported and that these programs should not have to be entirely self-supporting.

All the theory in the world will have no point unless we face these very basic problems. Until a good portion of the regular members of faculties can be convinced that open learning programs make sense, that they are not suspect or suspicious, and that they provide new and different opportunities for teaching and learning, such programs will have not the slightest hope of success. Thus, open learning programs not only have the remarkable opportunity of teaching a new range of students, but they have the necessity of persuading the existing range of faculties and administrators that they are worthy of their support and their participation.



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Adult Development— Implications for Higher Education

**Arthur Chickering
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A key problem for lifelong learning and the education of adults is to develop conceptual clarity concerning students' motives, learning styles, and the major outcomes of various educational programs and teaching activities. Then learning settings pertinent to particular purposes can be identified or created, activities to foster desired outcomes can be specified, and evidences of progress can be recognized. With a conceptual framework in hand, theories concerning higher education, which posit relationships among institutional settings, teaching activities, and evidences of student progress, can be formulated and systematically examined. And thus the capacities of learners, teachers, and educational institutions may increase, so that lifelong learning and the learning society can move from rhetoric to reality.

Conceptual clarity will not be achieved overnight, or finally. It will change in the light of further experience and in response to shifting social

DEVELOPMENTAL AGES

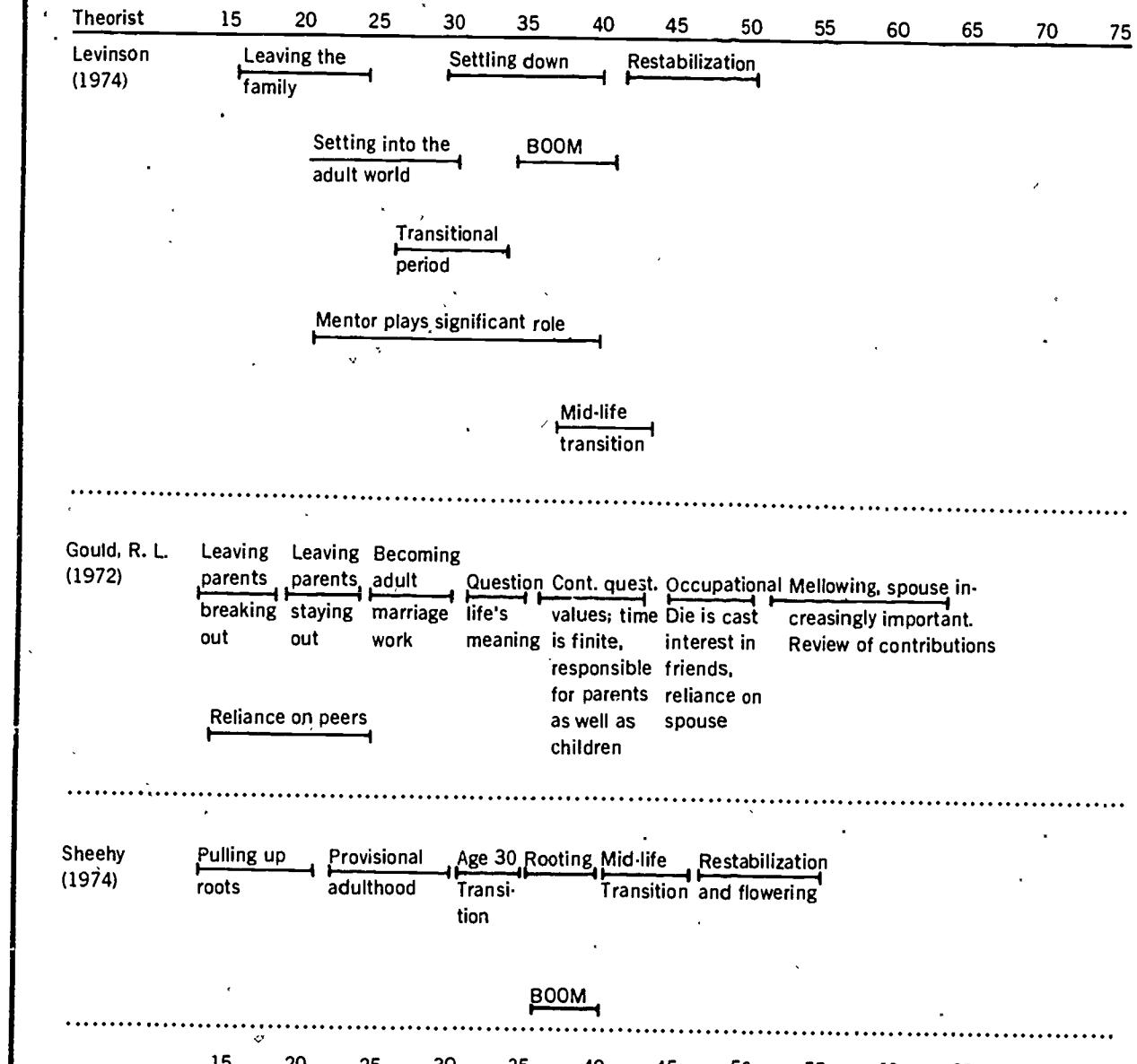


Figure 1

conditions and requirements. But a beginning must be made, and this paper attempts to do so.

The line of thought pursued here goes like this. The most solid basis for understanding adult motives and learning styles lies in the research and theory concerning adult development and cognitive styles. This information has clear and powerful implications for educational motives, orientations toward knowledge, teaching practices, approaches to evaluation, and student-faculty relationships. Therefore, systematic organization of information concerning adult development and learning styles can provide a conceptual matrix useful to those concerned with the education of adults. It can be used by administrators in decisions concerning staffing, facilities, educational resources, and academic processes; by faculty members as they try to improve their teaching effectiveness with the wide range of different adults they face; by students themselves as they plan and carry out their own education.

My comments address that line of thought in two parts: first, with a brief description of some major dimensions of adult development; second, with some of the implications for education.

I—Adult Development

Most theorists take age 16 or 18 as the beginning of adulthood. During those years many young persons legally and functionally assume several major adult responsibilities and obligations, and while doing so disengage themselves from family and home.

Some theorists seek to discover developmental ages—relationships between age and general orientations, problems, dilemmas, developmental tasks, personal concerns, or other adult characteristics. They have identified periods of stability and transition, and describe some of the characteristics associated with them. Other theorists seek to discover the stages of development in a defined area such as intellectual development, moral development, or ego development.¹

Developmental Ages

Figure 1 summarizes the work of Levinson, Gould, and Sheehy. These theorists describe a general pattern which begins with the transition from adolescence to adulthood during the late teens and early 20's. During the mid-20's—a period of "provisional adulthood"—first commitments to work, to marriage and family, and to other adult responsibilities are lived out. Then another transitional period occurs during the late 20's and early 30's where these initial commitments are re-examined and their meaning questioned. The long-range implications of continuing with the current work, spouse, community, and life style have become apparent, and one or more of these may look less challenging or satisfying than at 22. In some cases changes must be made. In others reaffirmation and renewed commitment occurs on a more solid basis, sometimes after trial flirtations with one or more alternatives.

The 30's are a time for settling down, achievement, Becoming One's Own Man (BOOM). (Becoming One's Own Person? BOOP?) But as the 40's approach time becomes more finite. Responsibility for parents begins to be assumed while responsibilities for adolescent or college-age children continue. The likely limits of success and achievement become more apparent and the "mid-life transition" is at hand. Major questions concerning priorities and values are examined. Unless a change in work is made now the die is cast. Affirmation of the earlier career most frequently occurs, but with moderated expectations and drive. A long-standing marriage may be temporarily or permanently upset. Friends, relatives, and spouse become increasingly important as "re-stabilization" occurs during the late 40's and 50's. Interests foregone in the service of work receive more attention. Mellowing and increasing investment in personal relationships characterize the 50's.

These abstractions do little justice to the work of Levinson and Gould. Read them. If you are under 60; you'll find yourself clearly captured.

THE LIFE CYCLE

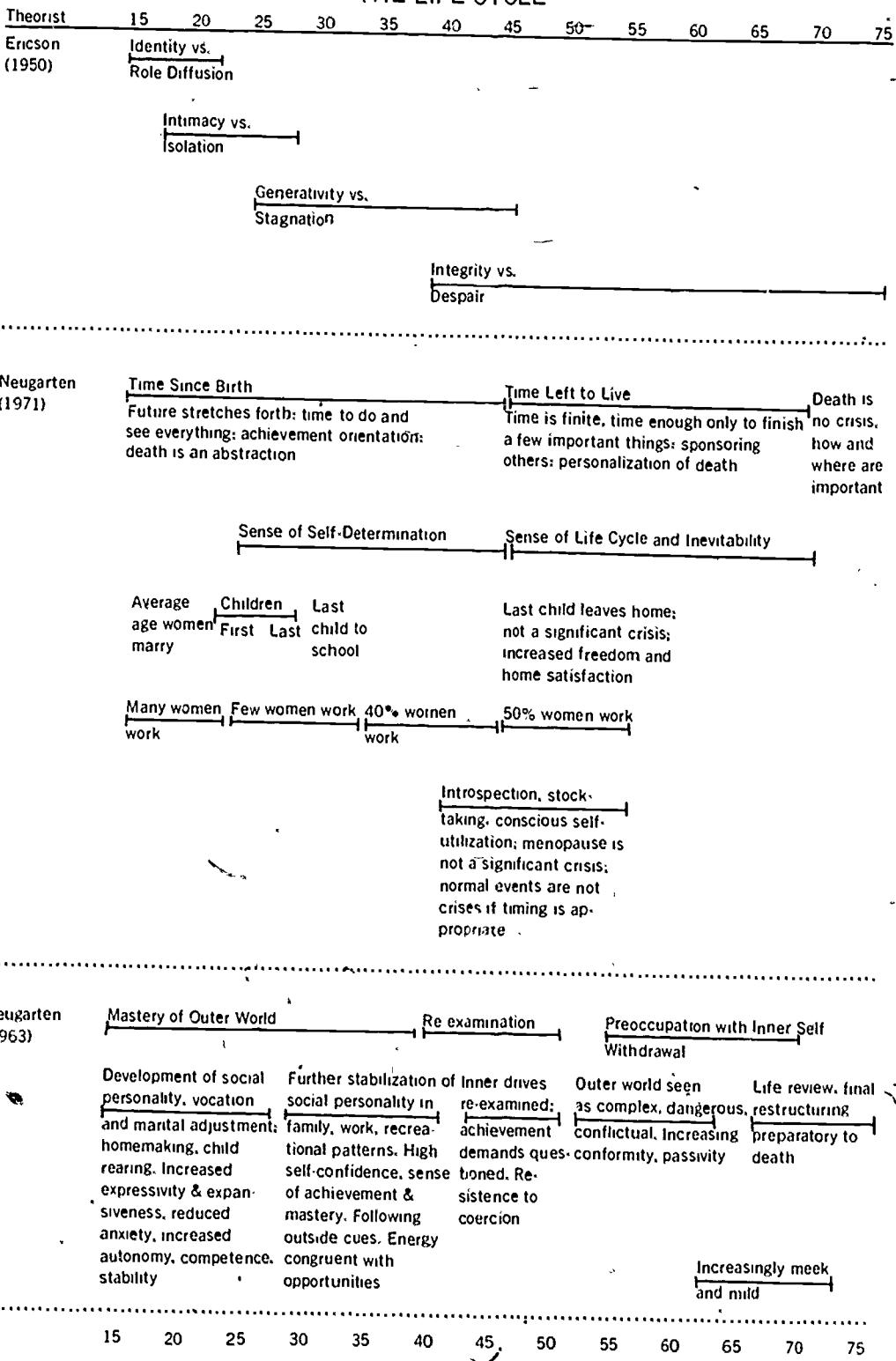


Figure 2

191

Bernice Neugarten's work (1963, 1971) is built on Erick Erikson's seminal formulations (1950, 1959) concerning the life cycle. Figure 2 summarizes some of her findings, juxtaposed with Erikson's major adult stages. Neugarten, more than any other theorist, elaborates the role of age and timing in adult development. The shift from "time since birth" to "time left to live" sets boundaries for other major changes: from sense of self-determination to sense of inevitability of the life cycle, from mastery of the outer world, through re-examination, to withdrawal and pre-occupation with inner self and sponsoring others; from achievement to self-satisfaction. She found that when normal events were "on time"—children leaving home, menopause, death of a spouse, even one's own death—they were not experienced as crises. Departure and death of loved ones causes grief and sadness, as does the prospect of one's own leaving, but when it occurs at times and in ways consistent with the normal expected life cycle, most persons manage the event or the prospect without major upset.

These various studies tell us much about the outcomes of experiential learnings which occur through the life cycle. They identify major motives

—dilemmas, interests, aspirations, circumstances—which lead students to pursue further education. They suggest some fundamental concerns and developmental tasks which lie behind the desire for a degree, the pursuit of a better or different job, the wish to read more widely and experience more deeply, to meet new persons and new ideas, to explore dimly seen horizons. But there is more to know, and comes from research and theory concerning developmental stages.

Developmental Stages

In general, theorists see development as a series of hierarchical stages, each of which builds on and includes the earlier stages. Movement from one stage to the next occurs not simply through instinctual unfolding, but through person-environment interactions influenced by genetic predispositions and limitations.

EGO DEVELOPMENT — Figure 3 summarizes several theorists who have conceptualized comprehensive stages of development. Loevinger, describing their general similarities, says, "All of the conceptions project an abstract continuum that is both a normal developmental sequence and a

EGO OR CHARACTER TYPES						
Author	Amoral	Fearful Dependent	Opportunistic	Conforming to Persons	Conforming to Rule	Principled Autonomous
Pack & Havighurst (1960)	1. Amoral		2. Expedient	3. Conforming	4. Irrational- conscientious	5. Rational- altruistic
C. Sullivan, Grant & Grant (1957)*	1. Presocial	2. Passive- demanding	3. Conformist (exploitative)	3. Conformist (cooperative)	4. Authoritarian 5. Guilty	6. Self-consistent 7. Integrative
Harvey, Hunt & Schroeder (1961)	Sub-1	1. Absolutistic- evaluative	2. Self-differ- entiating	3. Empathic		4. Integrated- independent
Loevinger (1970)	1. Presocial symbiotic	2. Impulse- ridden, fearful	3. Self-protective	4. Conformist	5. Conscientious	6. Autonomous integrated
Vanden Daele (1968)	1. Excitation- oriented	3. Conflict- avoidant	5. Peer and reciprocity oriented	6. Social conformist	7. Duty and responsibility	8. Independent agent orientation 9. Self-social integration

*Adapted from Kohlberg, 1973, p. 46.

Figure 3

dimension of individual differences in any age cohort. All represent holistic views of personality and all see behavior in terms of meaning or purposes... All are more or less concerned with impulse control and character development, with interpersonal relations, and with cognitive preoccupations, including self-concept... Finally, although the sequence of stages is not identical from author to author, there are many recurring similarities."

Loevinger gives us a general sense of the later stages. After summarizing the pre-social, impulsive, and self-protective stages of childhood, she says:

More people have recognized this (conformity) stage than any other. Here the child identifies himself with authority, his parents at first, later other adults, then his peers. This is the period of greatest cognitive simplicity. There is a right way and a wrong way, and it is the same for everyone all the time, or for broad classes of people.... What is conventional and socially approved is right... Rules are accepted because they are socially accepted... Disapproval becomes a potent sanction. There is high value for friendliness and social niceness. Cognitive preoccupations are appearance, material things, reputation, and social acceptance.... People and one's own self are perceived in terms of social group classifications. Individual differences are scarcely perceived. The way things or people are and the way they ought to be are not sharply separated.... People in the conformist stage constitute either a majority or a large minority in almost any social group...

The transition between the conformist and the conscientious stages is marked by heightened consciousness of self and of inner feelings. The transition appears to be modal for students during the first two years of college. A related aspect of the transition is perception of multiple possibilities in situations. Rules are seen to have exceptions or to hold only in certain contingencies. Inner states and individual differences are described in vivid and differentiated terms. One feels guilty not primarily when one has broken a rule, but when one has hurt another person. Motives and consequences are more important than rules *per se*. Long-term goals and ideals are characteristic; "ought" is clearly different from "is." The individual is aware of choices; he strives for goals, he is concerned with living up to ideals and improving himself. The moral imperative remains, but it is no longer just a matter of doing right and avoiding wrong. There are questions of priorities and appropriateness... Achievement is important, and it is measured by one's own inner standards rather than being primarily a matter of competition or social approval.

The transition from the conscientious to the autonomous stage is marked by a heightened sense of individuality and a concern for emotional independence. The problem of dependence-independence is recurrent throughout ego development. What characterizes this transitional stage is the awareness that even when one is no longer physically and financially dependent on others, one remains emotionally dependent...

The autonomous stage is so named partly because one recognizes other people's need for autonomy, partly because it is marked by some freeing of the person from the often excessive striving and sense of responsibility during the conscientious stage. Moral dichotomies are no longer characteristic. They are replaced by a feeling for the complexity and multifaceted character of real people and real situations. There is a deepened respect for other people and their need to find their own way and even make their own mistakes.... We do not believe that inner conflict is more characteristic of the autonomous stage than of lower stages. Rather, the autonomous person has the courage to acknowledge and to cope with conflict rather than blotting it out or projecting it onto the environment. The autonomous person is concerned with social problems beyond his own immediate experience. He tries to be realistic about himself and others.

In most social groups one will find no more than perhaps 1 per cent, and usually fewer, at our highest or integrated level.... Only a few individuals reach the stage of transcending conflict and reconciling polarities that we call the integrated stage.

There is a temptation to see the successive stages of ego development as problems to be solved and to assume that the best adjusted people are those at the highest stages. This is a distortion. There are probably well-adjusted people at all stages... Probably those who remain below the conformist level beyond childhood can be called maladjusted... Some self-protective, opportunistic persons, on the other hand, become very successful... Certainly it is a conformist's world, and many conformists are very happy with it, though they are not all immune to mental illness. Probably to be faithful to the realities of the case, one should see the sequence as one of coping with increasingly deeper problems rather than as the successful negotiation of solutions.

These Loevinger quotations give a general sense of the major stages of adult development. While there are differences in terminology and in significant details, the level of agreement among theorists is sufficiently strong and broadly based to provide one set of solid information which has implications for education.

Figure 4 shows how Loevinger describes her general stages in terms of four major dimensions: impulse control, character development, interpersonal style, conscious preoccupations, cognitive style. Changes in developmental stage require changes in these four major areas. Change need not necessarily occur simultaneously or in precise one-to-one fashion, but if there is little development in one dimension, further development in the others is restricted. Living by self-evaluated standards is difficult if one is still powerfully preoccupied with appearance and social acceptability. Differentiated feelings and motives, or respect for the autonomy of others, cannot be readily achieved if one is still in the grips of stereotypes and cliches.

STAGES OF DEVELOPMENT¹

Stage	Impulse Control, Character Development	Interpersonal Style	Conscious Preoccupations	Cognitive Style
Presocial		Autistic	Self vs. non-self	
Symbiotic		Symbiotic		
Impulsive	Impulsive, fear of retaliation	Receiving, dependent, exploitive	Bodily feelings, especially sexual and aggressive	Stereotypy, conceptual confusion
Self-protective	Fear of being caught, externalizing blame, opportunistic	Wary, manipulative, exploitive	Self-protection wishes, things, advantage, control	
Conformist	Conformity to external rules, shame, guilt for breaking rules	Belonging, helping, superficial niceness	Appearance, social acceptability, banal feelings, behavior	Conceptual simplicity, stereotypes, cliches
Conscientious	Self-evaluated standards, self-criticism, guilt for consequences	Intensive, responsible, mutual, concern for communications	Differentiated feelings, motives for behavior, self respect, achievements, traits, expression	Conceptual complexity, idea of patterning
Autonomous.	Add: Coping with conflicting inner needs, toleration	Add: Respect for autonomy	Vividly conveyed feelings, integration of physiological and psychological, psychological causation of behavior, development, role conception, self-fulfillment, self in social context	Increased conceptual complexity, complex patterns, toleration for ambiguity, broad scope, objectivity
Integrated	Add: Reconciling inner conflicts, renunciation of unattainable	Add: Cherishing of individuality	Add: Identity	

Note—"Add" means in addition to the description applying to the previous level.

¹From Loewinger, J., Wessler, and Redmore, C. **Measuring ego development**. San Francisco, Calif.: Jossey-Bass, Inc., 1970.

Figure 4

MORAL AND ETHICAL DEVELOPMENT — These major dimensions, posited by Loevinger, identify areas which have been pursued in more detail by others: moral and ethical development, intellectual development, and the development of interpersonal relationships.

Figure 5 juxtaposes Loevinger, Kohlberg, and Perry.

Figure 6 describes the Perry and Kohlberg formulations in more detail. The two systems do not precisely fit together because they are complementary rather than closely analogous. Kohlberg emphasizes shifting orientations toward authority, others, and self, such that self-chosen principles replace those given by authority or defined by peers, group identification, or the general culture. Perry describes increasingly complex ways of knowing and thinking about moral issues, increasingly complex ways of defining and maintaining values and commitments while recognizing

pluralism and accepting contrasting values and commitments of others.

Note that although both Perry and Kohlberg's systems express very general human values—pluralism, respect for human dignity and integrity, dissent, individual self-determination and development—they are relatively content free. Thus educational activities designed to enable change from one stage to the next can be carried on in relation to a wide range of moral and ethical values or issues. Commitments to either a conservative or liberal socio-political view, or to a theistic or atheistic religious belief can be carried to the highest stages, although the particular belief or commitment will be held very differently.

INTELLECTUAL DEVELOPMENT — Bridges can be built between the comprehensive theorists, the moral and ethical stages postulated by Kohlberg and Perry, and theorists who focus on cognitive development. Kohlberg has done this for the relationship between his stages and Piaget's.

STAGES OF EGO DEVELOPMENT ASSOCIATED WITH MORAL AND ETHICAL DEVELOPMENT

Author		Ego Development				
Loevinger (1970)	Presocial	Impulse-ridden, fearful	Self-protective	Conformist	Conscientious	Autonomous integrated
Kohlberg (1968)	Egocentric	Obedience and punishment oriented	Moral and Ethical Development Instrumental egoism and exchange	Good-boy approval oriented	Authority, rule, and social order oriented	Social contract legalistic orientation Moral principle orientation
Perry (1970)		Basic duality	Multiplicity prelegitimate	Multiplicity subordinate, multiplicity correlate or relativism subordinate	Relativism correlate, competing, or diffuse	Commitment foreseen Initial commitment, implications of commitments, developing commitments

Adapted from Kohlberg, 1973, p. 46.

Figure 5

STAGES OF MORAL AND ETHICAL DEVELOPMENT

Kohlberg

Perry

Preconventional Level:

Cultural rules of good and bad, right or wrong interpreted in terms of hedonistic consequences and power of authority.

Stage 0. Egocentric Judgement.

Judgments made on basis of what I like and want. No conception of rules or obligation independent of my wishes.

Position 1. Basic Duality.

World seen in polar terms of we-right-good vs. they-wrong-bad.

Stage 1. Punishment and Obedience.

Physical consequences determine goodness or badness of action, regardless of human meaning or value of the consequences.

Avoiding punishment and unquestioned deference to power values in their own right.

Position 2. Multiplicity Prelegitimate.

Diverse opinions perceived but others are confused or wrong.

Stage 2. Instrumental Relativist.

Human relations viewed in marketplace terms. Reciprocity, fairness, and sharing present, but only with clear trades for self-satisfaction. "You scratch my back, I'll scratch yours."

Conventional Level:

Maintaining family, group, and national expectations as value in its own right regardless of consequences. Conformity, loyalty and active support of the social order dominate.

Stage 3. Good-boy, Nice-girl.

Good behavior is what pleases others, and is approved by them. Behavior frequently judged by intention. "Meaning well" becomes important for the first time.

Position 3. Multiplicity Subordinate.

Diversity and uncertainty accepted as legitimate, but temporary in areas where authority just hasn't found the answers yet.

Position 4. Multiplicity Correlate or Relativism Subordinate.

Legitimate uncertainty seen as extensive. Pluralism, with "everyone has a right to his own opinion," and relativistic reasoning dominate, or in relation to authority, become "what they want."

Stage 4. Law and Order.

Right behavior is doing one's duty, respecting authority, maintaining the social order for its own sake.

Postconventional, Autonomous, Principled Level:

Individual tries to define moral values and principles which are valid and applicable apart from the authority of the individual or group holding them and apart from the individual's own identification with those groups or persons.

Stage 5. Social Contract Legalistic.

Right action defined by general standards which have been critically examined and agreed to. Clear awareness of the relativism of personal value and corresponding emphasis on procedures for reaching consensus.

Position 5. Relativism Correlate, Competing, or Diffuse.

All knowledge is relativistic and contextual.

Stage 6. Universal Ethical Principle.

Right defined by conscience in accord with self-chosen ethical principle that appeals to logical comprehensiveness, universality, and consistency; justice, reciprocity, and equality of human rights, respect for human dignity.

Position 6. Commitment Foreseen.

Need for orientation in a relativistic world through personal commitment perceived.

Position 7. Initial Commitment.

First commitment or affirmations are made.

Position 8. Orientation in Implications of Commitments.

Implications of commitment are experienced. Subjective and stylistic issues explored.

Position 9. Developing Commitments.

Identity affirmed among multiple responsibilities. Commitment perceived as ongoing, unfolding activity through which life style is expressed.

Figure 6

Figure 7 adds the general stages of ego development. Perry, Loevinger's cognitive styles, and the hierarchy described in Bloom's *Taxonomy of Educational Objectives in the Cognitive Domain* (1956). In cognitive development there is a general sequence from concrete memorization through recognition of relationships among events, instances, classes, to cognitive processes which construct combinations of relationships, isolate variables, or create new combinations or groupings, and culminate in the ability to apply principles or concepts to new situations and evaluate the results.

II—Implications for Education

The data concerning developmental ages and the life cycle help us think more soundly about both content and process. They clarify the larger motives behind the investments of time, money, and energy, behind the personal sacrifices made by many students. They show us the more fundamental purposes that power degree aspirations, pursuit of promotion or a career change, desire to meet new persons, read more widely, explore new ideas and interests. They remind us that the existential questions of meaning, purpose, vocation, social responsibility, dependence, human relationships, which so many adolescents face with difficulty, are reconfronted by many 30, 40, and 60-year-olds.

With such information in our working knowledge we can more effectively distinguish between those whose aim is simply professional training, and those for whom professional concerns are more oriented toward clarifying the major expectations of a job and the career patterns associated with it.

We can better recognize that the 35-year-old who comes for clearly specified professional knowledge or competence needed for a promotion or a new opportunity, will define a program and approach it very differently from the 45-year-old who wonders whether all those long hours, family sacrifices, short-changed human relationships, and atrophied interests were really worth it. Both of these students will be different from the 25-year-old eagerly exploring the potentials of a first career choice. The 30-year-old housewife whose husband thinks she should become more sophisticated, develop broader interests, get out more, and define her own career will be very different from the 25-year-old just settling into the challenges and satisfactions of new babies and a new home, and from the 50-year-old who is building a more rich and easy existence with a devoted husband.

These data also help each student and faculty member anticipate the problems and changes which may come over the horizon in the future. Educational purposes and plans for study can then take account of these predictions.

By recognizing these general patterns and responding to individual differences within them, our ability to help students identify their own motives and educational needs will be enhanced substantially. Educational activities more often will be on target; programs can be more effectively planned, and more generally issued concerning staffing, resources for learning, and evaluation.

The research and theory concerning developmental stages has more fundamental implications, and suggests some of the major changes necessary for more effective higher education.

STAGES OF EGO DEVELOPMENT, MORAL AND ETHICAL DEVELOPMENT, AND INTELLECTUAL DEVELOPMENT

Ego Development	Moral and Ethical Development			Intellectual Development	
	(Kohlberg)	(Perry)	(Loevinger)	(Piaget)	(Bloom)
Amoral	Egocentric		Stereotypy, conceptual confusion	Symbolic, intuitive thought	
Fearful-Dependent	Obedience—punishment oriented	Basic duality		Concrete operations, 1. Categorical classification	Memorization
Opportunistic	Instrumental egoism and exchange	Multiplicity prelegitimate		Concrete operations, 2. Reversible concrete thought	Application
Conforming to Persons	Good-boy, approval oriented	Multiplicity subordinate multiplicity correlate or relativism subordinate	Conceptual simplicity, stereotypes, cliches		
Conforming to Rule	Authority, rule, and social order oriented	Relativism correlate, competing, or diffuse	Conceptual complexity, idea of patterning	Formal operations, 1. Relations involving the inverse of the reciprocal Formal operations, 2. Relations or propositions involving triads	Analysis
Principled Autonomous	Social contracts legalistic oriented	Commitment—foreseen	Increased conceptual complexity, complex patterns, toleration for ambiguity, broad scope, objectivity	Formal operations, 3. Construction of all possible relations; systematic isolation of variables;	Synthesis
	Moral principle orientation	Initial commitment, implications of commitment, developing commitments		deductive hypothesis testing	Evaluation

Figure 7

Figures 8, 9, and 10 take three conceptual frameworks concerning development—ego development, moral development, and intellectual development—and posit relationships among developmental levels, motives for education, institutional function, learning processes, orientations toward knowledge, and educational practices. These figures draw on materials developed by Harold Lasker and his associates at the Harvard Graduate School of Education for use with and by adults there, on observations by Jack Noonan at Virginia Commonwealth University, and on my own research and experience (1969, 1973, 1974). The relationships also are consistent with other substantial bodies of research and theory which I will not detail here. The varied studies of cognitive styles, despite their diverse formulations and

points of departure, find relationships similar to those indicated. Witkin's (1972) studies of field-dependent and field-independent students, for example, supports the suggested relationships proposed for different stages of ego development, moral development, and intellectual development. So do Stern's studies of authoritarians, anti-authoritarians, and rationals, and of relationships between student needs and educational environments (1970). The work of Feldman and Newcomb (1969), Heath (1960), Katz (1968), and others concerning college impacts on student development also supports many of the postulated relationships.

The basic point made by these figures is that motives for learning, learning processes, and orientations toward knowledge are linked to levels

EGO DEVELOPMENT, MORAL DEVELOPMENT, INTELLECTUAL DEVELOPMENT, MOTIVES FOR EDUCATION, INSTITUTION FUNCTION, AND LEARNING PROCESSES

Ego Development	Moral Development	Intellectual Development	Motive for Education	Institutional Function	Learning Processes
Self-protective	Obedience—punishment oriented	Memorization, application	Instrumental; satisfy immediate needs	Arouse attention and maintain interest; to show how things should be done	Imitation; acquire information, competence, as given by authority
Conformist	Instrument egoism and exchange, good-boy approval oriented		Impress significant others; gain social acceptance; obtain credentials and recognition	Provide pre-determined information and training programs; certify skills and knowledge	
Conscientious	Authority, rule and social order oriented	Analysis, synthesis	Achieve competence re competitive or normative standards. Increase capacity to meet social responsibilities	Provide structured programs which offer concrete skills and information, opportunities for rational analysis, and practice, which can be evaluated and certified	Discover correct answers through scientific method and logical analyses. Multiple views are recognized but congruence and simplicity are sought
Autonomous	Social contact, legalistic oriented	Evaluation	Deepen understanding of self, world, and life cycle; develop increasing capacity to manage own destiny	Ask key questions; pose key dilemmas; confront significant discontinuities and paradoxes; foster personal experience and personally generated insights	Seek new experiences; re-organize past conceptions on the basis of new experiences; develop new paradigms; create new dialectics
	Moral principle Orientation				

(Note that just as each developmental stage incorporates and transforms earlier stages, so also each subsequent learning process and institutional function incorporates and transforms earlier levels. Adapted from materials developed by Dr. Harry Lasker and Cynthia R. DeWindt, Harvard Graduate School of Education.)

Figure 8

of ego development, moral development, and intellectual development. These motives and orientations in turn define certain institutional functions or roles. Learning processes, and educational practices consistent with them, are then developed to carry out the institutional functions. Given a particular level of development with its attendant motives, orientations, and learning styles, a systematic institutional response can be created which best serves students at that level.

The problem is that most institutions only pitch to one or two developmental levels, although their students span the full range. Most institutions are oriented toward the opportunistic, conforming to persons, or conforming to rule levels of ego development and to the memorizing, applying, and

analyzing levels of intellectual development. They treat education as though it were a commodity, a collection of discreet items, packaged in a few standard-sized boxes, sold by the Carnegie unit. Buy a cartfull, pick up your green stamps as you check out, and move on. It is not by chance that the super market has been an appealing metaphor for some educators, and that curriculum committees and departments, like merchandizers, primarily talk about this or next year's offerings in the light of shifting student interests.

The metaphor may be hackneyed and overstated. But it's more truth than poetry for many institutions. Take any 10 at random. How many curricula, courses, classes, seminars, examinations help students build knowledge from personal

EGO DEVELOPMENT, MORAL DEVELOPMENT, INTELLECTUAL DEVELOPMENT AND ORIENTATION TOWARD KNOWLEDGE

Ego Development	Moral Development	Intellectual Development	What Is Knowledge?	What Use Is Knowledge?	Where Does Knowledge Come From?
Self protective	Obedience – punishment oriented	Memorization, application	A possession which helps one get desired ends; ritualistic actions which yield solutions	Education to get: means to concrete ends; used by self to obtain effects in world	From external authority; from asking how to get things
Conformist	Instrumental egoism and exchange Good-boy approval oriented		General information required for social roles; objective truth given by authority	Education to be: social approval, appearance, status used by self to achieve according to expectations and standards of significant others	From external authority; from asking what others expect and how to do it
Conscientious	Authority, rule and social order oriented	Analysis, synthesis	Know how: personal skills in problem solving; divergent views resolved by rational processes	Education to do: competence in work and social roles; used to achieve internalized standards of excellence and to serve society	Personal integration of information based on rational inquiry; from setting goals; from asking what is needed, how things work, and why
Autonomous	Social contract legalistic oriented Moral principle orientation	Evaluation	Personally generated insight about self and nature of life; subjective and dialectical; paradox appreciated	Education to become: self-knowledge; self development; used to transform self and the world	Personal experience and reflection; personally generated paradigms, insights, judgments

(Note that just as each developmental stage incorporates and transforms earlier stages, so also each subsequent level of motivation and orientation toward knowledge. Adapted from materials developed by Dr. Harry M. Lasker and Cynthia DeWindt, Harvard Graduate School of Education.)

Figure 9

experiences and personally generated syntheses and paradigms? How many teachers in natural sciences, humanities, and the social and behavioral sciences help students not only acquire basic concepts, competencies, and knowledge, but also help them use those learnings to make some sense of life and of themselves in it, to generate personal insights through subjective and dialectical processes? Certainly many students are not prepared, or motivated, for that level of work. But of those who are, how many are recognized and responded to accordingly? And how often are explicit efforts made to help those not ready to become so?

Most institutions treat truth as objectively real, modeled, given by authority, or "discovered" by logical or scientific analyses. Conceptions concerning the nature of knowledge, where it comes from, and how it is to be used emphasize acquiring information or competence in order to satisfy immediate needs, to obtain immediate benefits, to do a particular job, to fill a particular role. Current changes toward competency-based programs create closer correspondence between objectives, educational activities, and outcomes, and specify more apposite criteria for evaluation. Greater "truth in packaging," and more effective education for some

EGO DEVELOPMENT, MORAL DEVELOPMENT, INTELLECTUAL DEVELOPMENT, AND EDUCATIONAL PRACTICE.

Ego Development	Moral Development	Intellectual Development	Teaching Practice	Student-Teacher Relationships	Evaluation
Self-protective	Obedience—punishment oriented		Memorization, Lecture-exam application	Teacher is authority, transmitter, judge. Student is receiver, judged.	By teacher only
Conformist	Instrumental egoism and exchange		Teacher-led dialogue or discussion		By teacher only
			Open "leaderless" "learner centered" discussion	Teacher is a "model" for student identification.	By teacher and peers
Conscientious	Authority rule and social order oriented	Analysis, synthesis	Programmed learning, correspondence study, televised instruction	"Teacher" is an abstraction behind system. Student a recipient.	By system
Autonomous	Social contract, legalistic oriented		Contract learning, 1. Time, objectives, activities, evaluation negotiated between student and teacher at the outset and held throughout.	Student defines purposes in collegial relationship with teacher. Teacher is resource, contributes to planning and evaluation.	By teacher, peers, system, self. Teacher final judge.
	Moral principle orientation	Evaluation	Contract learning 2. Time, objectives, activities, evaluation defined generally by student, modifiable with experience.		By teacher, peers, system, self. Self final judge.

(Note that just as each developmental stage incorporates and transforms earlier stages, so also each subsequent learning process and institutional function incorporates and transforms earlier levels.)

Figure 10

students may result. But most competency-based programs address the same developmental levels as the typical system.

The relationships become more apparent when explicit teaching practices, student-faculty relationships, and orientations toward evaluation are addressed. The lecture-examination system as typically practiced best suits the fearful-dependent, opportunistic, and conforming to persons' levels of ego development and the obedience-punishment, instrumental egoism and exchange, and good-boy orientations of moral development. The key dynamic here is the comfortable fit between (a) the student's disposition to identify with persons in authority, to accept their definitions of right and wrong, to avoid punishment by deferring to their power, and (b) the teacher's assertion of authority, an emphasis on dispensing information for students to memorize, and use of exams to punish wrong answers and reward right ones. When the lecture-examination approach goes beyond the personal authority of the teacher and makes use of more abstract authority, as often is the case, then the approach moves to an authority, rule, and social-order oriented level. Here it is the system which defines right and wrong. The same authoritarian dynamic occurs except that it is more generalized. Socratic dialogue or teacher-led discussions best fit the opportunistic, instrumental egoism and exchange level; they provide rich information about the teacher's views and permit the student to shape his own responses accordingly, receiving immediate rewards through the satisfying exchanges which result. Open, "leaderless," "learner-centered" discussions best fit the conforming to persons, approval orientation where sensitivity, pleasing and helping others, acceptance of group decisions are called for. Programmed learning, correspondence study, and most other forms of "mediated instruction" currently used fit well the authority, rule, and social order orientation.

Contract learning can take two forms. In one form the objectives are set by the student but the time, activities, and criteria for evaluation result from negotiations between the student and teacher. The contract is a commitment to the plan developed and the plan is to be held throughout unless major events call for re-negotiation. This approach to contract learning best fits the principled autonomous stages of ego development, and social contract, legalistic orientation of moral development. In the second form of contract learning, the student, with or without help from the teacher and others, defines the objectives, time, activities, and criteria for evaluation. The "contract" may be quite specific or very general. In either case, it will be held flexibly and modified in the light of experience as it is pursued. This approach to contract learning

best fits the principled autonomous stage and moral principle orientation.

The different teaching practices also are expressions of different approaches to student-teacher relationships and evaluation. The teacher as an authority, transmitter, and judge, who carries sole responsibility for evaluation, best fits the obedience-punishment, and the opportunistic or instrumental egoism stages. Where the teacher is a model, known well enough to permit student identification, and where evaluation includes fellow students as well as the teacher, the fit is with the conforming to persons, approval-oriented stage. In programmed learning and other forms of mediated instruction, the teacher is an abstraction behind the system. Criteria for evaluation are specified by the system, and responses are usually mechanically scored, often by machines. In contract learning the teacher is a resource person who contributes to planning and evaluation. The relationship may be more or less collegial and the student may carry more or less responsibility for defining the program and for evaluation, depending upon the approach used. The patterns of relationship, and approaches to learning and evaluation, in contract learning best fit the principled autonomous stages of ego development and moral development.

The relationships set forth in Figures 8, 9, and 10 suggest a way of thinking about and planning post-secondary education for lifelong learning. But they are only a beginning. Any institution serving a diverse range of students will have persons at different developmental ages and different developmental stages, ranging from opportunistic to principled autonomous levels of ego development, from obedience-punishment orientation to moral principle orientation in moral development, and from concrete operations and memorization to complex formal operations, and evaluation in intellectual development. Because of this diversity an institution cannot simply pitch its educational program at a particular stage or limit it to a particular area. Many opportunistic and conformist students come to higher education with important purposes which deserve to be met. These purposes should not be ignored, those students should not be turned away or turned off. But neither will their needs be fully served if they are not helped to see more clearly the dynamics of age and stage by which they are more generally governed. Alternatives need to be developed which more effectively serve students at more complex levels of development, but an institution serving diverse adults cannot limit itself simply to those more complex levels.

Colleges and universities must be responsive to the major dimensions of adult development and to the ages and stages of the students served. Work is

already underway in several key areas. Lawrence Kohlberg and his associates have developed materials and teaching approaches which explicitly aim to help persons move from one level of moral development to the next, and have used these in secondary schools, colleges, prison settings. Harold Lasker is tackling Loevinger's stages of ego development and is trying various approaches to achieve change from one stage to the next with corporation employees and adult students.

But higher education need not, and indeed cannot, leave all the work to professional specialists or to externally funded consortia. For the most important job is to re-examine current classes, courses, majors, general education programs, degree requirements, in the light of this knowledge. The disciplinary and inter-disciplinary subject matters, the areas of vocational and professional preparation, the programs oriented toward social problems and social concerns will remain the practical focus of most students, and the bread and butter of higher education. Although it is useful to develop specific programs, resources, and activities which explicitly address one or another area of development, aiming to help students move from one stage to the next, it is much more important to begin modifying and amplifying current programs so that students can pursue them at their optimum level of development, and progress developmentally while meeting their more immediate and practical purposes.

Students, faculty members, and administrators all can contribute to, and profit from such a re-examination. A college president can sit down with these figures and ask, "How do current students distribute themselves among the areas and levels? Which areas and levels of development are best served by the major educational alternatives we provide, and by the facilities, faculty characteristics, and employment expectations which support those alternatives?"

A curriculum committee or a department can ask which cells are addressed by current courses, external programs, seminars, honors courses, major sequences. They can ask that courses and sequences specify relationships between teaching methods, field experiences, areas of student responsibility, readings, writings, examination

questions, and the developmental areas and stages for which they are most appropriate.

Participation by faculty members in re-examining their own fields is critical, because they know most about the diverse possibilities available in textbooks and primary sources, in audio-visual materials, programmed learning, and other forms of mediated instruction. They know what kinds of field observations, work experiences, or volunteer activities may have most power. They know the areas of controversy, where the value issues reside, what kinds of career patterns may be possible. In short, the professionals who are directly involved can be the richest sources of creative suggestions for redesigning current courses, majors, and general education programs in ways which more adequately cover the ages, areas, and stages which characterize current college students.

Students themselves can use this information for self-evaluation and educational planning. With appropriate supplementary materials, each student can decide (a) whether to pursue one or another area directly, and (b) how to pursue more immediate educational or vocational purposes in ways which also enable stage changes in one or more valued areas of development. On the basis of such reflections each student can make more powerful, efficient, and economical use of educational alternatives available, and help create others not yet considered, and can take more effective charge of his or her learning and personal development.

Concrete contributions by individual students and faculty members, by departments and curriculum committees, by individual institutions and their administrators, are of prime importance. For they will provide the wide array of concrete examples which are critically needed. More basic research and theory is necessary and will be undertaken by the professional specialists whose business it is. But the basic need now is to de-mystify the "affective domain," to demonstrate that colleges and universities can contribute to human development in ways which go beyond simple marketing of skills, information, and credentials. The basic need is to demonstrate that to do so, teachers don't need to become psychotherapists, and courses need not become sensitivity training sessions; that the best approach lies in relatively simple modifications of activities and areas of study already underway.

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NOTES

- ¹ The brief summaries included here do not claim to be comprehensive. The literature is already too large for that to be practical here, and the author's current knowledge is too scanty for it to be possible. But most of the major theorists are recognized. Furthermore, any brief synthesis oversimplifies, and, like Procrustes, cuts or stretches to fit the bed. Frequent sub-vocal repetition of "yes, but . . ." and "It's more complicated than that," is called for.

254



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Lifelong Learning: What Has Been the Real Response

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My remarks will focus largely on external degree developments since 1970. I realize that the concept of lifelong learning encompasses more than those learning opportunities that eventuate in an academic degree. However, the Office of New Degree Programs, which I represent, has been monitoring those programs that lead to an academic degree. And in this aspect of lifelong learning there has been sufficient movement to merit centering our attention on those developments. Since 1970, during a period when several established institutions closed their doors and dire predictions were being made regarding the viability of many other colleges and universities, several new institutions oriented exclusively to external degree opportunities came into being, dozens of other institutions have decided to offer external degrees, about half the state higher education coordinating bodies have launched studies, and commissions concerned with external degree

opportunities, and countless special services supporting or facilitating the offering of external degree programs have come into being.

Indeed, the higher educational scene in the United States in 1975, insofar as external degrees is concerned, is radically different than it was in 1970. Five years ago the term external degree provoked a "what's that" reaction more frequently than not. While today it isn't necessarily a term that everyone uses with understanding, it isn't quite as mysterious any more. Since 1970 we have had at least one substantial book-length essay concerned with the external degree.¹ In it, C. O. Houle defines the external degree as "...one awarded to an individual on the basis of some program of preparation (devised by himself or by an educational institution) which is not centered in traditional patterns of residential study." It is in this sense that I shall be using the term.

While I intend to discuss nontraditional programs in the United States, one way to interpret developments in our country is to make a comparison with another. In fact I would say that anyone who would attempt an overview of nontraditional study programs since 1970 and who would ignore The Open University in the United Kingdom would do so at his own peril.

The Open University did a great deal to crystallize some rather different ways of thinking about colleges and universities, and post-secondary education in general. It is fair to say that prior to The Open University the average citizen, both here and abroad, tended to think of a college or university as a place—a place to study and to learn. One way that The Open University is different can be brought home by consulting the *Commonwealth Universities Handbook*.² In the reference work all British universities are listed on a single page in alphabetical order, starting with the University of Aberdeen and going on to Bristol, Essex, Exeter, Leeds, London to the University of York. Reading this list tends to lull one into thinking of a university as a place—until one's eye runs across The Open University. Where is "Open, England?" Interesting that by its name alone The Open University suggests a different kind of institution. So one contribution of The Open University is to remind us that a university provides opportunities for learning and that a campus is a dispensable mechanism.

The Open University's impact on higher education in England and throughout the world has been substantial. In Britain in 1970-71 there were 236,000 full-time and 24,000 part-time students enrolled in universities and university colleges. In 1971 The Open University, as a single institu-

tion, contributed about 20,000 new enrollments, and thus made itself into a numerically significant educational unit. Its staff is over 1600 and it involves several thousand other people in a part-time helping relationship to its program.

The Open University's program, addressed to adults over 21 years of age, involves correspondence and the use of broadcasting and other media. Most of its students are employed full-time and students part-time. It has no campus, it uses an unusual academic year that begins in January and runs to November. Its courses are offered by teams, not teachers. It has harnessed the computer to help manage learning and to operate the institution. Its students have been successful. By 1974 it has produced close to 10,000 graduates. Of the first class that started in 1971, 34.5 per cent had obtained their degree four years later, and it is possible that eventually an even larger percentage will earn their degree.³ As an institution and a program, it had no model to follow. Instead it created a design that educators around the world have studied, wondered about, and considered duplicating, but no one has done so. And in the United States many educators find it stands for something sufficiently attractive that we have seen many proposals for establishing "open universities."

The Open University of the United Kingdom that has been popularized is a second chance institution. Its students are those who could not or would not attend a traditional university. And if the undergraduate program of The Open University were all that it had to offer, it might not fit the concept of lifelong learning too well. From the perspective of lifelong learning, we should watch The Open University not so much from the view of its program to date, but how it intends to move in the future. It has already started to offer what it calls "post-experience courses," non-degree work relating more closely to adult students' occupational needs. These courses run for one year and lead to a certificate. About a year ago a task force studied the role of The Open University other than as an undergraduate school. The task force offered four recommendations that would relate it more solidly to lifelong learning. These recommendations included the preparation of materials or courses to supplement those provided elsewhere, materials or courses for those working in particular jobs or professions, materials to help people cope with a changing society, and assistance in increasing the general level of educational preparedness in the community. The task force report was accepted and a non-undergraduate area planning committee is to be formed to develop a 10-year plan that requires public funding. A member of the task force wrote, "Some of us anticipate, there-

fore, that before the end of the century, The Open University will be recognized not merely as an institution that introduced multi-media degree courses on a large scale...but also as the major instrument for the democratization of the system."⁴

Let's move to America. The Commission on Non-Traditional Study (1973) chose for its final report the title *Diversity By Design*.⁵ Certainly, the American nontraditional scene is characterized by diversity. It might be appropriate to use words like ingenuity, inventiveness, maybe even creativity, to describe the ways in which individuals, institutions, and agencies have proceeded to organize ideas, people, and things to offer degree opportunities for such diverse categories of adults as housewives and mothers, service men and women, para-professionals seeking upgrading, prisoners, people on welfare, drug addiction workers, mid-career business executives, union members, and a host of ethnic or minority groups. Indeed, the diversity has been so great as to make a comprehensive overview almost an impossibility. So it is conceivable that someone else might elect to stress somewhat different aspects than I have.

Since 1970 there has been a genuine push in many state higher education coordinating boards and agencies to expand lifelong learning opportunities for adults. However, the road has indeed been rocky. In only about 15 states have one or more statewide degree programs been implemented since 1970. In an equal number of states various proposals have been developed, but they have not mustered the necessary support to bring programs into being. There is either no activity in the remaining states, or it is very low-key. The generalization is that 1/3 of the states have implemented programs, and 1/3 of the states have yet to approach the matter. One good bit of advice is that new program planners should look at the proposals that have not succeeded, as well as those that have. Some of the best analyses and comprehensive designs are to be found in proposals that never get off the ground. There are probably some good lessons to be learned from these efforts.

The response of individual institutions, in contrast to state systems, is even more difficult to summarize. In the survey conducted for the Commission on Non-Traditional Study in 1972, it was found that "...between a fourth and a third of American colleges were not merely providing unconventional opportunities for students, but were actually offering nontraditional degree credit programs."⁶ Unconventional in this instance referred to characteristics such as the type of student enrolled, the location of the learning experience, or the method of instruction. While the Office of

New Degree Programs has not conducted any more recent general surveys, it has been following selected external degree programs that in general have come into being in the last two or three years. There are about 80 such programs, almost equally located in private or public institutions.

In addition to programs based in a single institution, several institutions have joined forces to offer external degree programs through organizational arrangements that are quite varied. Perhaps the best known is the University Without Walls program of the Union for Experimenting Colleges and Universities. The UWW program began in 1970, and now encompasses approximately 30 public and private institutions. Its program stresses a highly individualized form of higher education which is uniquely implemented within a general framework of the UWW plan by each of the participating institutions. More recently the union has been exploring the potential of its plan for high school students as well.

Some of the cooperative efforts of institutions is targeted to serving the needs of special student groups. The Servicemen's Opportunity College is an arrangement whereby 250 two and four-year colleges are joined together in a network to serve the educational needs of people in the military. SOC provides for coordination among the participating institutions that facilitate degree completion opportunities for military personnel. The program is concerned with liberal entrance requirements, the provision of college-level instruction on military bases, residency requirements that take into account the mobility of military personnel, and crediting the educational experiences of servicemen and women. Less well-known and operating at a single base, is Eagle University at Fort Campbell, Kentucky. Eagle University is a consortium of 11 universities located in Tennessee, Kentucky, and Florida that offer coordinated instruction at the base. While Eagle University does not itself award a degree, all degrees available through the member institutions may be earned by Eagle University students. In addition, Eagle University provides for standardized tuition charges, uniform student records, a credit bank, and consolidated registrations.⁷

The Nontraditional Study Program, under development since 1974 by the East Central College Consortium, bears watching because of the special challenges that are involved. The consortium consists of seven small traditionally oriented, liberal arts colleges: Bethany, Heidelberg, Hiram, Marietta, Mt. Union, Muskingum, and Westminster. The institutions are located on a horizontal axis that extends from West to East across Ohio into

Pennsylvania, and vertically through Ohio into West Virginia. The institutions are located in fairly small towns. They are private colleges with faculty resources that would total about 600-700 persons. The previous experience of these institutions in working with adult students ranges from practically none to moderate activity. The plan is to develop "portable learning components" that would permit students to study and learn fairly independently. Two degree options would be available: a degree awarded by one of the participating institutions or a degree awarded by the consortium.

Another type of cooperative arrangement brings together several institutions in a geographic area where there is probably an educational market that is insufficient or so diverse as to make it impossible for a single institution to meet the need. Examples are the Quad-Cities Graduate Studies Center, located in Illinois but serviced by 10 institutions in that state and Iowa, or the Rockford Regional Academic Center, again located in Illinois but serviced by seven institutions in that state and Wisconsin.

Sometimes cooperation is legislated. In Virginia in 1973 the General Assembly authorized the Council on Higher Education to establish regional consortia within six areas of the state. Each unit was to consist of a state-supported institution located in the region, the state-supported institutions offering significant amounts of off-campus work in the region and private colleges and universities that elected to join. The consortia are charged with developing nontraditional degree programs at the baccalaureate and masters level which have minimum residency requirements and maximum transferability of credit.

A particularly interesting type of consortium is one that serves as an educational broker, for example the Hudson Community College Commission in New Jersey. The commission identifies student learner needs and draws upon the resources of St. Peter's College, Jersey City State College, or Stevens Institute of Technology. The commission came into being in 1974 with the approval of the State Board of Higher Education. It services an area of about 600,000 persons that is without a community college. A major function of the commission is to effectively utilize the existing educational resources of the area. Interestingly, the commission has degree granting authority, and is funded on the same formula basis as other public community colleges in the state. Another example of an educational broker is the New Jersey Educational Consortium, Inc.

In addition to cooperation centering on instruction, the development of teaching material,

courses, or the delivery of instruction, some efforts toward cooperative activities are pointing toward the assessment of learning, particularly experiential learning achieved by students prior to enrollment in a program leading to a degree. There are, of course, national systems of credit by examination, such as the College Board sponsored College-Level Examination Program. However, the measurement problems go beyond those amenable though standardized examinations. This is part of the concern of the New England Open Learning Task Force which consists of representatives of the six New England State Universities. Staff support for the project is coming from the New England Center for Continuing Education. The Pennsylvania State Education Department and New Jersey have been exploring similar concerns. The recently organized Consortium of the California State University and College System is also concerned with trying to develop some systemwide services to assess experiential learning. A major cooperative research and development effort got underway last year and is known by the acronym CAEL (Cooperative Assessment of Experiential Learning). Ten colleges and universities are working with ETS to develop processes, procedures, and techniques addressed to the assessment of experiential learning. The project concluded its first year's work with seven major products that will be tried out in colleges and universities during the coming academic year.

Apparently these projects arise because the assessment of experiential learning (learning arising from non-sponsored work or living experiences prior to enrollment) and the assessment of experiential education (college-level achievement derived from college or university sponsored off-campus programs) are complex, require the development or refinement of special technique, require highly trained staff to perform, and tend to be fairly expensive. Ways are being sought to improve the quality of service that is rendered, and, hopefully, to help keep the cost of such assessment to more manageable proportions through cooperation.

Finally, one of the sponsors of this conference stands on the threshold of implementing some unusual opportunities for lifelong learning. The University of Mid-America, formed through the cooperation of the University of Missouri, University of Kansas, Kansas State University, Iowa State University, and the University of Nebraska, will provide the mechanism for regional delivery of college-level courses, including those originally developed by the SUN program in Nebraska. With substantial support from the National Institute of Education, the University of Mid-America will

take over research, course development, fund-raising and marketing of materials for students who wish to engage largely in home study.⁸ UMA's courses will utilize a variety of technologies, and will be produced by course teams, in a concept that has been successfully pioneered by The Open University in the United Kingdom. Plans are to include in the courses television components, audio cassettes, film strips, study guides, and some elements to be presented as lessons printed in newspapers. The cooperating universities will have responsibility for implementing arrangements for the delivery of courses within their respective states, and for providing for the enrollment, crediting, examining, and awarding of degrees. It would appear that even though the University of Mid-America is substantially different in many respects from The Open University in the United Kingdom, it probably represents our closest approximation of Open University to date.

Broadly speaking, the move toward cooperation seems to be motivated by a variety of considerations. The more effective use of existing resources is certainly one motivation. Expanding program outreach is another. Organizing the educational market place is a third. Striving to do more through cooperation and mutual support than is possible through the individual efforts of a single institution is another reason. On balance it seems that in most of the cooperative efforts that have come to the attention of the Office of New Degree Programs, the students or potential students seem to be coming out ahead. That is, more opportunities and more varied opportunities are available. However, the path to cooperation is not necessarily easy. Sometimes arrangements are tried; they fail to function as intended, and the arrangement is dissolved. Very shortly after the New York Regents Degree program came into being, the state of New Jersey announced a parallel program known as Thomas A. Edison College. Further, both states announced that they would work together, to share in the fruits of examination development, and to minimize the extent to which their efforts would overlap. A formal agreement was signed by both states to signify their intent to joint activity. After a brief period of time the arrangement was discontinued because of irreconcilable differences between the approaches that the two programs wanted to pursue.

I would like to turn attention now to a discussion of the broad designs of external degree programs, and to consider the implications of these designs for lifelong learning opportunities. Familiarity with the general designs is of some importance, particularly for those who may be exploring the applicability of an external degree

program in a particular institutional setting. More simply, external degrees are not only of one variety. Some designs may be more appropriate for some institutions or for some student groups than others.

One design for an external degree focuses on the organization and administration of conventional programs. The significant obstacles and barriers to nontraditional student participation in the program are identified. Sometimes formal surveys of potential student clienteles are conducted to reveal this information. Then the institution redesigns the program so as to reduce, minimize, or eliminate the barriers. If new students cannot attend regularly-scheduled day classes, courses are offered on weekends. Courses may be scheduled more intensively, so that students need only attend classes every two or three weeks. Course units may be designed so that everything needed by a student is available for independent home study, with only an occasional contact needed with the instructor, perhaps by telephone. To recapitulate, this design of an external degree facilitates access to a conventional degree. Perhaps it is the most common nontraditional degree, and it is found in an evening college. However, many of the non-traditional degree opportunities that have emerged in the California State University and College System recently are of this variety.

The second design for an external degree focuses on issues of curriculum. In this instance, a degree program for adults is regarded as something different from the degree program for the traditional college age student. The adult needs are perceived as different, and the adult potential for learning is seen as different. This design has two variations. In one the institution continues to assume strong responsibility for the characteristics of the degree program. In this design, all students are held to essentially the same requirements; the program usually is organized around interdisciplinary courses in liberal arts and leads to degrees, such as Bachelor of Liberal Studies or Bachelor of General Studies degrees. In the second variation of this design, the stress may be on stating degree requirements in terms of various competencies, instead of course units. The student is entitled to his or her degree whenever competency in all areas represented by the degree can be demonstrated. Formal courses are seen as one means, but not necessarily the only means, through which competency may be acquired. This design usually involves the student and the institution in a learning contract or contracts. The student and the institution agree on the nature of the student's degree objectives; the ways that will be used to attain the

objectives, the evaluations that will be made, and the criterion to be applied to ascertain that the contract has been fulfilled. Minnesota Metropolitan State College would be an example.

In the third general design for an external degree, attention is focused on validation. That is, the degree-granting institution or agency develops a conception of a particular degree in terms of the learning that it is to represent. This conception can be either course requirement-oriented, competency-oriented, or perhaps even a mixture of the two. The degree is attained when the student provides evidence of having mastered the learning of the degree design. The student's evidence might come from examinations, from transcripts of courses completed, from acceptable evidence of learning acquired in non-college settings such as business, industry, the military, etc. The validation model is, indeed, the most unique external degree in this country since 1970. It simply did not exist as an opportunity before that time. The New York Regents degree program pioneered this effort. Currently there are 6,000 students enrolled in the program, including 1,800 nurses. Since 1972, over 2,300 degrees have been awarded.⁹

The validation model external degree is also represented by Thomas A. Edison College in New Jersey. This institution has awarded 426 degrees at the associate level, and 35 baccalaureate-level degrees. In part, the dramatic difference in the numbers of degrees awarded at the two levels is because the baccalaureate degree has only been available within the last year. The college has 1800 students currently enrolled.¹⁰

The Connecticut State Board for Academic Awards is the third operational instance of a validation model external degree. It is the most recently established program, following legislation passed in 1973. It has authority to award undergraduate degrees based on examinations and the transfer of credits. Its first efforts will be at the associate level.

The fourth design is what I call the complex systems model. As you might expect, it incorporates elements of several of the previous designs. The external degree programs of Florida International University would be an example. Empire State College would be another. The latter institution came into being late in 1971, and by January, 1972, there were 50 students enrolled. By 1974 over 2,100 students were enrolled and 131 students had earned their baccalaureate degree.¹¹ The University of Mid-America is also an illustration of a complex systems design.

You will note that I do not treat technologically-based external degrees as a separate design. The

reason is simple. Technology can be used as an element in almost any of the designs described above. Television, for example, has been used to bring traditional courses to students in remote locations or to make it possible to receive instruction on schedules somewhat different than conventional classes. TV College in Chicago pioneered this application by bringing courses required for the regular degree program to students' homes. Several other institutions have used instructional television fixed service to broadcast courses to classrooms in business or industrial sites. The telephone is being used as an adjunct to independent study. Two colleges on the East Coast are using specially equipped commuter railroad cars to offer degree courses to ambitious New York workers. However, technology can be used to bring unconventional as well as conventional instruction to students. One can, of course, differentiate among various technologies or in the extent to which a specific technology is being applied. As one might expect the modern, more complex technologies tend to be used in those programs that expect to serve large student audiences. Some authorities argue that to advance lifelong learning opportunities on a large scale, it will become necessary to effectively harness technology to gain either efficiency or convenience, or both.

I would like to conclude my overview by sharing two observations with you: (1) the expanding interest in external degree programs at the graduate level and (2) the fresh look that community and junior colleges are giving to nontraditional study.

At the graduate level, external degrees are being developed in increasing numbers in masters programs targeted toward a variety of professional career objectives. Of course, for many years we have had contract programs in which an institution would offer the requisite courses for a degree to intact student groups, such as students at a military base overseas, or for people in a particular business, industry, or governmental unit. In addition, in recent years two to three dozen open graduate level external degree programs mainly at the masters level have come into being. There has been a slight concentration of such programs in business administration or management and engineering. However, other fields include psychology, public administration, vocational education, counseling, the humanities, applied economics, human services, advertising design or illustration, religion, public health planning, insurance, human resource management, gerontology, and long-term health care. And, of course, there are a few doctoral programs, such as the education program at Nova, the Union Graduate School, and a recently announced program at Johns Hopkins in human

communication and its disorders—a program that probably fits the criteria for an external degree. If it means anything at all, the increasing number of inquiries coming to my office about graduate-level external degrees suggests that more institutions are currently examining this possibility.

My second observation concerns the fresh look that community and junior colleges are giving to nontraditional study. In 1974, Peralta College for Nontraditional Study was the new name given to a unit of the Peralta Community College District in California. This college will focus on varied nontraditional student groups (ex-convicts, women, physically handicapped, senior citizens). It intends to bring instruction to the students where they reside or work.

Dr. Virginia Trotter has brought to your attention the applications of cable TV by Flathead Valley Community College. The Los Angeles Community College District's long-range plans call for a unit, currently named the 10th Dimension, to consolidate the district's efforts regarding non-traditional study. Chicago City College recently announced a ninth unit in which will be centered special concerns for nontraditional students. The plans in this instance call for more effective and coordinated use of all community resources, especially the public libraries. The St. Louis Community College District recently concluded an elaborate survey of adult needs and interests and an analysis of barriers and available resources. It concluded that there was much more to be done.

The Community College of Vermont, operating without a campus and with the whole state as its community, is focusing attention on the rural poor of that state. La Guardia Community College has organized Middle College to create an educational bridge from secondary school to college, in a program that emphasizes cooperative education. The Kansas City Junior College District has established a fourth unit to serve as a community renewal college.

In the private sector, Simons Rock College has had a middle college leading to an associate degree, and has extended the concept upward to incorporate a baccalaureate level degree. La Guardia and Simons Rock seem to be reaching for a conceptualization of education that reflects an increased sense of continuity and integration. I find it fascinating that the community colleges which had already found so many ways to serve adult learning are now reassessing their efforts and finding that there is an even bigger job to be done.

Earlier I spoke of the title of the report of the Commission on Non-Traditional Study, *Diversity*

By Design, and I have provided you an extensive but yet incomplete recital of the diversity of efforts to expand lifelong learning opportunities in the form of external degrees. However, the overall design for these new program developments seems pointedly elusive. This seems true whether we approach the question from the viewpoint of policy, practice, planning, or goals. The developments of external degrees are characterized by unevenness in terms of geographical areas, people being served, opportunities available, fields of study, age, social groups, etc.

Quite recently, there have been some attempts to affect a great unity of effort and overall purpose. The attempts to conceptualize the relationships that should interrelate work and education, the attempts to advance career education, and the expansion of financial support for the part-time student all illustrate the potential. Much more seems needed, however.

I think the time is ripe for evaluations and appraisals of external degree efforts. Most of the non-traditional degree programs have been of such recent origin that we have not had significant numbers of graduates of these programs. We are now at a change point. The innovative efforts that began in the early 1970's have produced graduates. Many of these programs will be completing studies for their initial accreditation. These data should be made available and summarized. We can start asking questions about the success of the graduates of the programs and probing the acceptability of the graduates in their career efforts. Admittedly, the current job market and the recession complicate the picture. However, that is a complication, not a reason to not make the evaluations. In this regard, Doctor Medsker's work at the Center for Research and Development in Higher Education, University of California, Berkeley, will be most helpful. He and his colleagues have developed baseline data for a broad spectrum of external degree programs that can be used as a point of departure for further investigations.

I believe increased attention needs to be given to program quality and to issues of consumer protection. External degree programs tend to set aside as inconsequential many, if not most, of the conventional yardsticks by which potential students might make judgments regarding the value of an educational program. The accreditation process is slow. We also need to speed up and tighten the kinds of legislation that are needed to protect the interests of the student consumer. The issue of quality and consumer protection, is, of course, related to my previous point regarding the need for program evaluation. Moreover, mechanisms are needed whereby the results of evaluations are

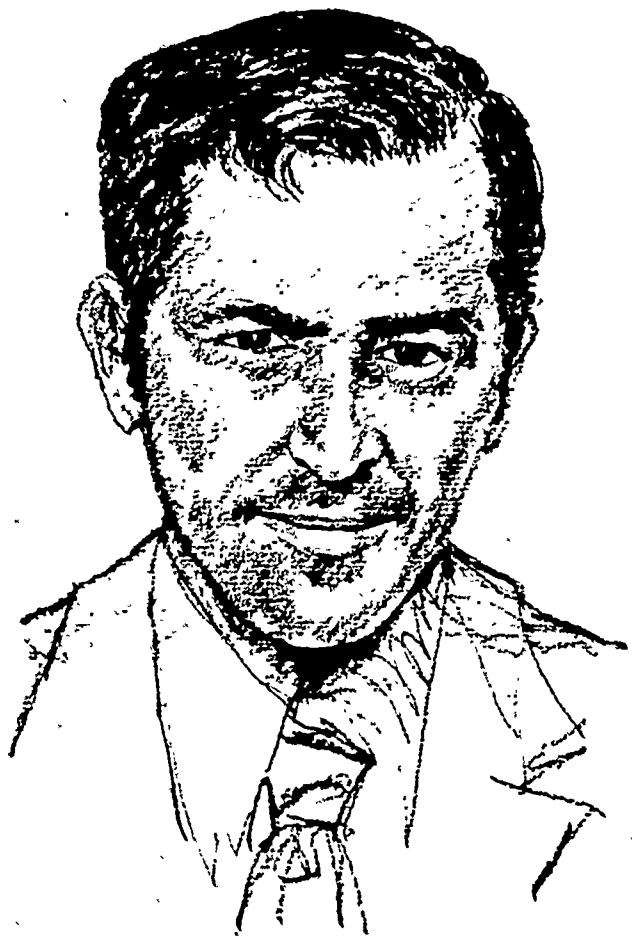
translated into language the layman can understand and use. Mechanisms are also needed for the dissemination of current and accurate information regarding program quality or the characteristics of the student groups who can benefit from particular programs.

The field of nontraditional study seems to reasonably mirror American education in general

in its inclination toward diversity. This is particularly true in the efforts that have been made to devise external degree programs. Yet, in survey after survey, our citizens continue to tell us of their unmet needs, their aspirations, and their hopes that go beyond what we have devised thus far. Maybe the time has come to give as much attention to design as we have to diversity.

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The Lonely Learners: Minorities in Open Learning Programs

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Open learning education may be compared to many things, ranging from the Holy Grail, to the Alchemist's Stone, to a passport to a better life. I am sure that the critics have even harsher language, but I am concerned with the meaning that this new mode of education can and does have for the minorities of this country.

When I first began organizing my thoughts for this presentation, several colleagues across the country gave me the benefit of their insights and their observations. Although varied, their comments were usually aimed at the impact that these programs can have on minorities, and on the problems as they saw them. Tom Hebert, one of the authors of *This Way Out*,¹ a collection of experimental programs in higher education, referred to open learning as "lonely learning," surely an apt phrase for that style of education which favors a heavy reliance on the initiative and determination of the student.

I have heard that such lonely learners may be unconscious pawns in the last phases of the struggle between traditionalists and the progressive educationalists; that the open learning programs are by-products of the misguided exodus from manipulated education; that minorities should stay within the deep waters of the mainstream and avoid the churning rapids of the fringe institutions.

Also, the phrase "lonely learning" may be said to characterize much of the painful maturation process of many open learning programs struggling in many of today's colleges and universities, as well as of many "open" colleges, or universities without walls.

Because I believe that open learning is as desirable at the institutional level as at the course level, I would like to discuss those new open institutions. They seem to exemplify so much of what is called open learning. Looking at them as a group, we can discern some common characteristics. They are usually addressing the needs of a homogeneous enrollment. Their initial budgets are low on funds, high on hope. Their instructors more often than not come from outside education, and they are usually skilled in community work. Accreditation is a spectre which haunts them from the first day of classes. They are locality-specific. Their curriculum is at the near end of the liberal arts and far from the technical or scientific dimension. They emphasize the individual and his learning, rather than the institution and its teaching. Their names are consonant with their striving and their attention to singular, community goals: Universidad Boricua, Colegio Cesar Chavez, Juarez-Lincoln, Flaming Rainbow, Colegio de la Tierra, Hispanic International University, Experimental and Bilingual Institute, and Malcolm-King College, among others.

At these new institutions may be found advocates of the open learning philosophy, and the bulk of them deal with minorities. Some of them have come into being as a working response to the "open door" policy of colleges. (This policy has been called a "revolving door" as well, but it may be just as appropriate to refer to it as a "trap door.") Besides their survival problems, these institutions are faced with the whole range of restructuring traditional learning processes. The task is not easy: "Innovation by design is more radical than innovation by expediency."²

Paulo Friere, in describing the negative characteristics of the educational system around him, said:

The teacher talks about reality as if it were motionless, static, compartmentalized, and predictable. Or else he expounds on a topic completely alien to the

existential experience of the students. His task is to "fill" the students with the contents of his narration—contents which are detached from reality, disconnected from the totality that engendered them and could give them significance. Words are emptied of their concreteness and become a hollow, alienated, and alienating verbosity.³

It is against this kind of banking type of education that much open learning rebels. Thus, one way to look at the phenomena of the community-based, free-standing institutions is as symptoms of a popular disenchantment with the traditional mode of American higher education. Or one can look at them as the vanguard of an approaching host of fundamental changes coming to what most of us have known as the college and the university. Or one can see in them expressions of the eternal, ubiquitous quest for individual, group, or community identity. Indeed, they are seen variously by diverse observers: as educational nostrum peddlers by conservative scholars; as depleters of scant available resources by competing applicants; as outposts for innovation and for institutional redirection⁴ by the experimenters and reformers; and as tough, hardy pioneers by those of us too polished for rough roads, or too established for risky adventures. The survival margin of these new institutions is thin.

But whether at a grass-roots institution or in an innovative program at an established college, motivation is, I believe, still at the root of many educational problems. Its complex nature admits to no ready analysis, its manifestations hint at little, which can be easily translated into action. Open learning education, where it concerns minority audiences, very quickly finds itself probing the edge of available research into motivation. Will the Indian student, brought up in a sharing environment, realize his potential with computer-assisted instruction? Will the Chicano who fears examinations surpass his expectations with a contract learning system? Will the Puerto Rican parent hold his own in a free-form seminar? Will the minority student find sufficient satisfaction in a growing portfolio of work to persist in defining his own criteria for excellence? At some innovative BA programs, for example, a more flexible curriculum encounters problems related to the mother language of the minority students, and cultural differences themselves pose dilemmas for the open learning administrator, who often must wrestle with the needed preparation of faculty as well as of the students.⁵

Of more urgency in open learning than in traditional programs is the necessity of grappling with the minority student's life view; there is a direct line between minority students' cultural identity and the flexibility of open learning pro-

grams. Yet, this also has a potential for troublesome questions: Will open learning programs, following the student's perception of his own needs, mask unperceived problems?¹⁰ Will unstructured learning fail to contribute a sense of competition and acceptance of failure often missing in disadvantaged learners? Will such programs accept the minority student in what he needs as well as for what he wants? Many minority students arrive at a learning opportunity fully expectant of traditional, almost ritualistic, teacher-learner roles: How will new programs accommodate these expectations?¹¹ "We are constantly trying to deal with the problems that arise because a minority student has become confused about his personal goals versus the goal of the university."¹²

For a student fully aware of the uncertainties of today's employment scene, the net result of a post-secondary education must be translated into further educational opportunity, if not employment. An open learning program which is advertised as innovative or experimental, or which does not in any way resemble the more structured models, may raise questions of legitimacy. "Acceptability is the whole thing," a colleague told me.⁹ At the root of a lot of mistrust of open learning programs is the terrific momentum that traditional higher education has built up in the consciousness of this country. The minority student at a small college aspiring for a graduate degree elsewhere views the departure from classroom and lecture as a risk. How will his academic record be assessed? How many credits will be transferred? Did he learn the appropriate skills which will enable him to compete successfully at a research institution? A B-plus from a small private college may have enough questions attached to it; what of the "Pass" record, or a portfolio of reports, demonstrations, and essays? Is this acceptable at a graduate school of his choosing?

For the student who is looking forward to a job after graduation, the questions can be as critical. Jose Llanes writes me that:

In managing an open learning program, the institution is offering a valuable service not only to the participant community, but also to the business and industrial community who will be the beneficiaries of the trained personnel. Institutions must incorporate the employer community into the program, offering meaningful participation and asking for their support. For the minority breadwinner who spent a lot of time to gain some very specific job skills, there should be a natural link to the public or private employer who can use his skills in the community after graduation.¹⁰

The relevant questions here are: For the student who wants a job at the end of his undergraduate studies, will open learning programs satisfy the prospective employer? Will the student have

picked up an adequate knowledge and appropriate skills through contract learning for job entry? As an example of the job-related open learning program, we have Washington International College, located in Washington, D.C. WIC is integrating a training program in a retail food business with a BA degree plan. The job training is supplemented with theoretical studies, which take the form of business, management, and communication competencies.¹¹

Another problem which permeates open learning programs as they involve minorities is the special kind of assessment which is needed. The minority student, no less than his counterparts, is skeptical of programs which are different from those he recognizes. Once in the programs, he must have his deficiencies and capabilities diagnosed if he is to take full advantage of the lonely learning opportunities. What are his needs, his language skills? For some, the new programs will only succeed where they are heavily supported by counselors or advisors. His fears will be diminished with his acceptance of a rigorous evaluation of his plan of study.¹²

Finally, there is the fear that open learning systems, focusing as they tend to do on the soft curricular areas, will draw minorities away from technical and scientific fields. Thus, efforts must be made to push harder to open up the sciences and to make open learning an application which knows no discipline barriers.

So far, we have discussed lonely learning as it applies to both institution and student. But at the peripheries one can see other entities laboring in the field of adult or post-secondary education. These entities are not necessarily institutional in nature—they address the supportive, auxiliary, or pre-college needs. The thirst for legitimacy in the tangled groves of accreditation and certification is not necessarily their condition; they seek the partial resolution of problems affecting the adult who has never gone to college, the learner who needs more knowledge in order to progress financially, the parent who has become resigned to a particular job or to a particular role in life. Some examples are WINNERS, which is a community-based effort to identify and counsel inner-city women in Boston, with the intention of fostering their ambitions for post-secondary education. Another is the *Instituto Latino* in Chicago, which seeks to create policy-related forums focusing on the needs of the Latino in that metropolitan center.¹³ The LULAC National Education Service Centers, located in 11 major U.S. cities, identify and encourage prospective students for career education and undergraduate and graduate work.¹⁴ In providing numbers of what have been called new learners,

these and other similar organizations foster the development of open learning programs by identifying the distinct needs of new minority audiences.

Just as the ethnic studies and the community-based institutions of these last handful of years may be reactions against the established and entrenched bureaucracy of education, so I suspect that much criticism of open learning is a reaction against formlessness and the lack of educational validity. But I contend that open learning programs can be capable of significant form, and they do have educational validity. Open learning programs attack the problems of learning, they enhance the learner's capability to learn, and they attempt this without regard to the administrative framework of 50-minute courses and arbitrary requirements. But for such programs to be fully acceptable to minorities, indeed to any thinking student, they must be integrated with sound evaluation systems, and they must be cohesive in intent.

Finally, among the fears that I have heard discussed concerning minorities in open learning programs is that such programs may be deviated into social and economic areas which ultimately will type open learning as a field for the unstructured, the unproductive, and the unskilled. Surely this need not be the case, and hopefully the next few years will see still more acceptance of open education, with as much emphasis on the learner's

innate abilities and his sense of being, as on the necessary skills to compete in our society no matter what his choice of endeavor. Thus, the freedom, the opportunity of open learning can mean for that student a re-enactment where he comes face-to-face with his own perceived notion of himself and his world. I choose to call this the re-enactment process, whereby the learner comes to grips with his own vision of what he can be, the steps which must be taken to overtake that vision, and the earnestness with which he must apply himself.

All of what I have said can be summed up in the words of Pierre Teilhard du Chardin:

Since its birth, knowledge has made its greatest advances when stimulated by some particular problem of life needing a solution; and its most sublime theories would always have drifted, rootless, on the flood of human thought if they had not been promptly incorporated into some way of mastering the world.... However far knowledge pushes its discovery of the 'essential fire' and, however capable it becomes some day of remodeling and perfecting the human element, it will always find itself in the end facing the same problem—how to give to each and every element its final value by grouping them in the unity of an organized whole.¹⁵

For those of you working with and concerned about minorities in open learning, you have a difficult and an exciting task before you. I envy you and I congratulate you.

NOTES

- 1 Hebert, Tom, and Coyne, John. *This Way Out*. E P Dutton New York, 1972. The phrase "lonely learners" was used by Tom Hebert in a conversation with me. Dr. George Calvert also used the phrase "lonely learning" in a letter to me.
- 2 Arce, Carlos. University of Michigan Personal communication
- 3 Freire, Paulo. *Pedagogy of the Oppressed*. New York. Herder and Herder 1970
- 4 Blake, Elias, Jr., "Minority Colleges as Outposts for Institutional Redirection." in *New Colleges for New Students* by Laurence Hall and Associates San Francisco: Jossey-Bass, 1974
- 5 Calvert, George C., director, Adult Education Program, University of Albuquerque Personal communication
- 6 Vasquez, Victor, director, Office for Spanish Surnamed Americans, ASPE, DHEW
- 7 Quinones, Gloria, formerly director, now coordinator of special projects, Experimental and Bilingual Institute. Personal communication
- 8 Young, Martha, assistant director, Adult Education Program, The University of Albuquerque Personal communication
- 9 Welch, Jim, director, Management Information Systems, Institute for Services to Education, Inc Personal communication
- 10 Llanes, Jose, coordinator designate, Multi-Cultural Teacher Education Program, School of Education, University of San Francisco.
- 11 Bratton, Morris, president, Washington International College. Personal communication.
- 12 Hernandez, Guadalupe, director, Women's Re-entry Program, San Jose City Community College, San Jose, California. Personal communication.
- 13 Cerdá, María, executive director, Latino Institute, Chicago. Personal communication
- 14 Castro, Rudy, director, LULAC National Service Centers, Washington, D.C. Personal communication.
- 15 de Chardin, Pierre Teilhard. *The Phenomenon of Man*. New York: Harper Torch Books, 1959

I appreciate the help given me by Ms. Grace Flores, program assistant, OSSA-ASPE-DHEW, Ms. Jessie Hailey, director, Development Skills Program, Southern Illinois University at Carbondale, and Richard Salvatierra, LULAC National Service Center, concerning the ideas in the presentations.



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Concerns of and about Minority Audiences and Women in Open Learning

**Lorraine F. Misiaszek
Native American Communications Project**

I would like to tell you a little bit about myself and why many of the Indian educators of the Northwest have started an Indian educational center for the four Northwest states of Washington, Oregon, Idaho, and Montana.

Before becoming director of the Advocates for Indian Education, I spent some time serving in the State of Washington's Office of Education, directing Indian education. I think I was one of the first practitioners of an unusual educational experience because I raised my children first, then went back to school to earn liberal art degrees in political science and journalism. It was 18 years from the time I graduated from high school until I entered college. Then I proceeded to get my master's degree in education, but that was after I had been an educational practitioner in the state office for two years. It seems I do everything backwards!

Encouraged by the Affiliated Tribes of Northwest Indians (an organization of 26 tribes in the four Northwest states) we began our educational center with the basic belief that there was a great need that was not being met in the area of curriculum materials, teacher training, and knowledge about Indians in general. I am willing to wager that of all the people holding Ph.D.'s today, very few have had two or three significant courses on the American Indian. And yet, in order to really get down to the history of this country, you have to go back before "Americans," before American History was written. For example, we are doing some research to develop a curriculum on one particular tribe in the Northwest for use in the classroom. We found that the only authentic materials that we could utilize were those that were developed by an archaeologist who was interested in one specific area: the early days of the Hudson Bay! But what was most unusual about the research that he had completed was that there were no records kept in this country about this period. He had to go to the archives in London to get material that dealt specifically with the American Northwest!

Needless to say, this whole area is in need of extensive development on the subject I call pre-United States history. Yet, American Indians have been on this continent for thousands and thousands of years! They have left a history and a culture and have established a learning pattern in order to survive. The lack of written records does not negate the fact that the American Indian had successfully and productively survived long before the white man settled and began recording the history of the "American people."

I am particularly pleased to be invited to address participants of the Second National Conference on Open Learning and Nontraditional Study because it represents a focus on open learning and nontraditional educational programs. This is precisely what the American Indians, in their culture and in their learning patterns, have been saying for centuries: that a person begins learning the day he is born and never stops learning until the day he dies. But for too many years American Indian children have been victims of the imported and traditionally structured educational system, leaving behind a dismal record of discontent and unfulfillment. It has nothing to do with intelligence or capability. Rather, it is a serious matter of differences in cultural and behavioral backgrounds that have not been taken into consideration in training programs for their teachers.

What we are attempting to do in our center is, first of all, to develop innovative instructional systems, methods, and materials which are of such a nature that they are practically non-existent. With

the help of one of our best friends in the Office of Education, we are working to develop an extensive communications project to produce a series of films on Indian history and culture.

The beginning of this project had a startling opening. About a year ago Jeannie Tully from the Office of Civil Rights made a visit to our town and shook up the administrators of the major school district. After this "awakening" she then proceeded to give us assistance in formulating and financially supporting a new program. This occurred, however, after she had persuaded the school district that something had to be done! Jeannie's office was instrumental in helping us obtain program money to begin developing a series of films on the plateau Indian tribes.

Many of you, if you do any investigation at all into materials about Indian history and culture, will find yourselves at a loss to find anything in the records, history books, or anywhere about the Plateau Indian tribes. Just about everyone has heard about Chief Joseph and the Nez Perce tribe, but beyond the one incident and one person very little is known about the Nez Perce's extensive history.

We at Advocates for Indian Education have begun research and subsequently brought a pilot film, *The Season of Grandmothers*, to Washington for viewing this trip. We have shown it to such groups as the Bureau of Indian Affairs, the Office of Education, and many interested groups in Washington. I must say that it is a most unusual kind of film because it reflects, first of all, the authentic Indian culture in that there was no acting or directing in it. Primarily because of the graceful naturalness about it, I personally find it the most authentic film I have ever seen. In our office we have previewed well over 100 movies and films about Indians, and we have found some serious flaws in each one of them. After looking at this type of media carefully and for a long period of time we were rather enthused about the possibility of further developing this kind of film for educational television use. In addition, we envision building many kinds of teaching materials for classroom use.

I guess what I am trying to say is that, in our own way, to put into practice some of the ideals that have been expressed at this conference would probably be the greatest satisfaction that we could hope to attain. We did not have a plan, we just responded to a crying need. This need, I think, is moving us into areas which we never envisioned venturing.

An example of new horizons and extensions are our satellite programs. This year we anticipate developing an individualized in-service teacher

training system which could be utilized both by educational television and by the satellite system. We think we can get the system sophisticated and usable enough so that schools—especially many of the small ones which are isolated by mountains or by great distances from large urban centers—can use the system for training its teachers; many schools simply cannot afford to bring those teachers into the city for in-service training.

It seems to me that such a teacher-training system would also be worthy of accreditation if we could work it out with one of our colleges, probably by private ones as they seem to be much more flexible in terms of doing creative and unusual things. We feel that offering college credit might be an incentive for teachers who have never wanted or been open to in-service training.

There seems to be a major problem among educators everywhere: a tremendous aversion to in-service training. These teachers cannot be forced to participate in such learning experiences, but how else are teachers, especially those with tenure, going to learn about, for example, American Indians? They never encountered it through all their educational preparation, and there is no other apparent way for them to acquire this deeply needed knowledge. And yet, no one can force any educator

to take this training. We are therefore trying to make it as pleasant and enticing as possible so that teachers will openly and positively agree to undergo this sensitivity training: a sensitivity and acceptability of a people too long universally stereotyped and forgotten.

Our organization is still new; we are just slightly over two years old. We have not existed long enough, or had a hard enough impact to change the patterns of defeat and discontent of Indian children in the public school systems, or the high drop-out rate in colleges under the traditional programs. We think that by utilizing all the ideas, programs, materials, and technology that we have discussed at this conference, perhaps we can have an impact much more rapidly upon changing the success patterns of Indian students than we would have had trying to work through the traditional system.

The school drop-out rate is still very, very high among our Indian children. The suicide rate is extremely high and we have extensive social and economic problems. We know that there is a long way to go in this area, but we know we cannot do it alone. We can only do it in partnership with the present educational system, mainly because that is the system with which we have the closest relationship and greatest exposure.



Betty Arnett Ward is assistant director of the Black Concerns Staff for the U.S. Office of Education. Her responsibilities with the USOE culminates a 27-year federal career as a civil servant in Washington, D.C. She also serves now as the president of the Adult Education Association of the USA. A former New York City vocational public school teacher and dean of girls, she has worked in literacy education for adults, served as a personnel officer and manpower utilization specialist and as a consultant to the USOE for the Lifelong Learning Institute, and participated in the International Federation of University Women's conference in Kyoto, Japan, in 1974. Ms. Ward is a native of Clarinda, Iowa, and earned her BS and MA degrees from the University of Iowa before pursuing advanced graduate work at Cornell University in the field of Industrial and Labor Relations.

Concerns of and about Minority Audiences and Women in Open Learning

Betty Ward
Black Concerns Staff—United States Office of Education

The sign said, "Wanted," and it included minorities and women when they're wanted, but not everywhere. Wanted: People. People who want to learn how to live. This is what the adult and continuing education movement is about. We're in touch with people everywhere who want to learn to live. What do they want to learn to live with or for? Many of them want to be inventors. Many of them want to be high speed racing car enthusiasts. Some want to explore the deep sea. Some want to participate as psychoanalysts, some want to recite classic literature and beautiful poetry. They may even write their own poetry. You've heard lots of it. Some want to participate in medical healing. Others want to be a part of the social system research.

The new openness in adult society and the era of the transparent self will require the acquisition of a great deal of new knowledge, more knowledge than most of us have had for some time, simply because it will help us to

understand many other people whose life-styles are not very much like our own. At last it seems that the educators and psychologists and behaviorists are equally interested and fascinated with this new openness.

Openness in the adult society—you know exactly what I mean! People are not hiding quite so much. Those who are hiding their feelings are only hiding them for a short while. So, there are some of us in the classroom, in the research lab, and also behind the desks at the social psychologists' as statisticians, who are asking questions of those people. "Why are you suddenly open?"

We see this, as do the psychologists, as a solution for pressing specific human and organizational problem-solving. We know that, at its best, adult and continuing education can help erase many barriers between what normally happens inside this concept of schooling and what happens outside of schooling.

We know that the development of open learning as a survival concept in recent years has brought about many answers. Internationally, we have finally agreed on two definite trends:

1. The legitimatization of adult self-education is definitely on the up-beat. It is at its best when it is supported by bona-fide selected materials, by instruments, advice, and supervision, produced by expert curriculum specialists and educational technologists, and when it is supplemented by organized adult learning opportunities through open and intensive use of libraries, museums, and cultural centers, combined with expanding schedules (day and night) of schools, colleges, and universities, skill centers, and satellite learning sites. Adult self-education seems to be on the increase.

2. Open learning makes it possible to avoid the old collision courses, the proverbial clash of blaming everything on one's race, on one's lack of opportunity, on one's street address, one's parental mix, a husband who is poor, or the hot weather. We can now identify many legitimate efforts to revitalize minority participation—of women, non-white Americans, and the under-educated adult through many leadership levels, and especially through our professional associations. I should like to confine most of my remarks to those efforts of professional associations, perhaps because this is the one area in which we all have worked on common levels, and for common purposes. Thousands of professional educators, behaviorists, archivists, and futurists represented by memberships in pro-

fessional associations are now joining with parents, students, personnel development administrators, government officials and voters in the major task of putting quality control into alternative education. They are avoiding the collision route by using all of their energy to construct workable educational options, and not a negative path, such as perhaps did characterize the efforts of the highly critical population segments of the 60's.

Groups now are doing several things together. Teachers, researchers, and government units are working to create a new atmosphere in which students of diverse backgrounds can exchange ideas, react to literature and art, and respect each other's differences and similarities. We are fast occupying ourselves in the presentation and distribution of packaged materials, and updated information on scholarships for minorities. Especially emphasizing those for women. Now that we have the guidelines in place for the assimilation of women in all educational activities, we are hoping that women will step forth and make themselves available so that the act can be tested. Location of funding sources still takes a good deal of our time, but we are trying to coordinate the sponsorship of national surveys and special studies which will forecast some kind of test reforms for minority education and placement. We're trying, on the other hand, to establish basic research priorities which include issues in the survival of Black studies in the university and college levels. So we are hoping that some interested researcher will step forward and agree that perhaps there needs to be an assessment of the impact of American education on African life and history, and also an assessment of the impact of American education, as it feels the impact from African life and culture.

We hope that we can further seek intercultural and cross-cultural themes which will interpret significant action trends in education for Black Americans. We are struggling in an effort to promote opportunities that bring equal pay for equal work for minorities, by minorities, and within minority groups (including women, youth, under 18, and Black senior citizens.)

I've outlined one or two areas where you might expect I would acknowledge some kind of plan which would bring young people and old folks together with teachers, preachers, and other kinds of persons in the helping profession. Let me outline one or two areas where, if you're interested, you might seek us out at a later time and express that interest.

1. National associations, as you know, are actively engaged in research and programs

which can prove helpful in your search for quality technical assistance. Technical assistance need not always revolve around money.

2. We are very anxious for Black Americans (and most especially women) to continue to volunteer wherever possible. We have found that volunteerism is an excellent arena from which might spring an unprecedented opportunity.

Opportunity based on volunteer work may spring up in unexpected places, because you're now permitted, even in the civil service regulation, all activity and experience, volunteer or paid, which may be considered, evaluated in, and made a part of rating material. This is not new, but a great many people did not stress it previously, and we hope that among the young, and especially among women, you will continue to remind prospective volunteers that their service is still valuable and is becoming more so. Make it, then, an area where you would give credit whenever you're in a position to do so. Make it an area where you would encourage women and minorities, men and women, to get into the whole premise of volunteerism as a stepping stone. We, of course, endorse the idea that volunteer help should not be regarded as completely free. Transportation fares, minimum lunch money, and that sort of fiscal coverage should be planned as a special part of budgets, not treated simply as a nice thing to pay whenever you can.

In the state of Illinois there are existent guidelines prepared by the Illinois state-wide continuing education unit task force authorizing the awarding of continuing education units, or credits. This especially protects the minority participant. It was not prepared with just the minority participant in mind, but wherever you have a good document, we feel that it does an especially good job of protecting the interest of the minority consumer.

Number one in nontraditional study, according to this task force, is giving a great deal of attention to verifying completion.

A second very major area is record keeping. This means not only are there a new position or two to fill, but there are some specific points where we feel record keeping can be helpful and protective for minorities. The records must contain the following information: (1) name and address of the awarding organization or institution; (2) the name of the individual participant; (3) social security number of the individual participant; (4) title of the program or activity completed; (5) a brief description of the learning activity, giving some indication of the content level, objectives and format; (6) starting and ending dates of the activity; and (7) the number of continuing education units awarded.

I hope that this does not fog the preview of those who object to further record keeping and data banks on students, but look at it from the other side. There has always been great confusion on the part of the participant who did invest time and money and his good faith when these units were not awarded because there were incomplete records.

The other two items which this task force felt were imperative were the maintenance of quality and the preparation of an evaluation, at times by a third party, for the completion and the whole outlay of what was to be accomplished.

Things to remember, when dealing with a minority participant: (1) To minimize problems and future discomfort, open learning plan and schedules should always be firmly designed to accommodate day people and night people. (2) Keep the participant informed ahead of time as to just what the interlocking mechanism is for acknowledging his skill, his tastes, and other components which he brings for evaluation. (3) Remember that multi-cultural and cross-cultural understanding both are enjoying accelerated curriculum experimentation among mass populations now, and that in the past only those who were widely traveled were able to claim this kind of good fortune.

Try new applications of this kind of information, so that the minority participant feels that he is now able to enjoy some of the same features as only those who had the money were able to enjoy earlier.

For those of you who get the publication, *Cablelines*, regularly, you're going to find a run-down on how many new ventures are available. In the pages of *Cablelines* you will find reports of minority, trade, and professional groups which provide training for minorities and minority cable ventures, and of Black colleges and telecommunications (indicating how deeply involved Black colleges are in this whole area of telecommunications at the present time). Many colleges with multinational enrollments have staff and professional faculty who can bring new benefits to particular parts of the country where use of the satellite may become increasingly available in the years ahead.

The International Federation of University Women, which includes women from 40 countries, held its conference in Kyoto, Japan, in August of 1974 on the general subject of the meaning and measurement of human progress. Among other things, the Percy Amendment was discussed at that conference. Senator Percy thoughtfully and skillfully brought into play the concept that a certain percentage of AID funds should be extended for the education of women in under-developed countries. Those wishing to learn more about it should

be in touch with Miss Nero Long, who has had the responsibility at AID to prepare the implementation paper. That's an exciting document. I think it is perhaps the most comprehensive effort that has brought about the utilization of your tax dollars for a long long time, and it is specifically earmarked for the undereducated woman in underdeveloped countries.

The last item I'd like to bring to your attention is a rather exciting issue, a special issue on non-traditional study published by the Adult Education Association of the U.S.A. in the February, 1975, issue of its journal, *Adult Leadership*. In that issue there appears a compendium of some eight rather well-done articles on the subject of the status of nontraditional study, the liberal arts college, and

the experiential learner, and the very elusive goals of educational equality.

The Office of Education, I believe, has risen to a great opportunity in these past 10 years. We have had several units in the office called "special concerns units," which means that we're willing to place some time and effort in this whole matter of services to minorities.

Let's hope that, as you rise to some of the challenges that are put before you during this Conference, you will find the time to assemble the needed bibliographies, encourage open learning participation, get out and speak before the meetings, and, yes, design and carry out some thoughtful ways to communicate with the young American about himself and the minority citizen or non-citizen he probably doesn't know at all.



Concerns of and About Minority Audiences and Women in Open Learning

**Mary Ellen Verheyden-Hilliard
National Educational Taskforce, NOW**

There is a book which we all read in Anthropology 101 called *Patterns of Culture* by Ruth Benedict. In the book, Benedict says that it's very difficult for a society to look at the patterns of culture, the socialization process that is affecting it, while it is still operating within that pattern. It is very easy to look back and say "Gee, look what we used to do then." But it's not so easy to look hard at what we're doing while we're doing it. That, in my judgement, is where we get caught in our attitudes toward girls and women. It is really very hard to look at the patterns of culture that have to do with sex role stereotyping because we are all so caught up in them. That stereotyping affects everyone's thinking and behavior.

Many people believe that girls and women should be treated a certain way because they are a certain way.—that everything girls and women do is written in the genes. But we really don't know yet what girls and women

are like because we have not raised any who have not been affected by sex role socialization. Shelia Tobias has talked about some interesting research which was done at Cornell University. People were asked to look at the babies behind the glass in the maternity ward and try to tell from behind the glass which were boys and which were girls. The babies were all suitably diapered and shirted and unknown to the people taking the test. Still, the people could tell which infant was a boy and which a girl. They could tell by the way the medical personnel handled the babies. Boys were bounced a little more; girls were held a little more closely and smiled at more. Now, if those are the messages that we're getting before we even get out of the hospital, I submit that we don't know anything about what men and women are naturally like because we are all trained from day one, before we even get out of the hospital, to have certain expectations of the way we will be treated because we are male or female, and not because of any feelings or needs based on sex that are coming directly from us.

The training girls receive from society, their socialization training, leads them, I believe, to be the servants of society in the dictionary definition sense of servant as "one who serves others." They are trained from a very early age to prepare to serve their husbands and to serve their children. I think it is no accident that the "feminine occupations" turn out to be those which are also servers of society: the nurse who serves the doctor and the patient, the secretary who serves the boss, and even the teacher who serves the children. When we look at the statistics, we can see that this "training" works. Over 52 per cent of all American women who work are in two occupations: clerical and service. The service category includes beauticians, waitresses, and other jobs at that level. Of all the professional women, what few there are, over 50 per cent are elementary and secondary teachers. Clearly girls are getting a message on which they act, and on which society sees to it that they act, when they are grown. What I would like to suggest is that we stop training girls to be servers, dependent, subordinate, and unequal. We must start giving them what I call an Affirmative Action Childhood.

Girls need an Affirmative Action Childhood to counteract the enormous pressures on them to limit their aspirations and, therefore, their lives.

The pressures begin in nursery school at least. Who is in the corner building with blocks and playing at being an architect, and who is in the doll corner ironing? Whose face is on the science toys and whose on the toy stove package?

As girls proceed in elementary school we discover that up to the age of about 10, girls and boys

of the same age are very much the same size and weight, on average. Between 10 and 12 there is a difference. The advantage in height and weight goes to girls, whose growth spurt on average begins sooner than that of boys. Yet when Mary runs to Teacher and says, "John is pushing me around," Teacher says, "Boys are so rough. You really shouldn't play with the boys. You go play with the girls." The teacher is giving that girl a message that she is not capable, that she can't take care of herself, that she should move away and not contend with the other half of the human race. The boy gets a message too. He learns that he can define the parameters of where a girl can play and with whom. He can say with impunity, "No girls allowed."

Let's look at this from another perspective. I believe the time is past (always with exceptions which we can all identify) when most teachers would allow a child of any ethnic or cultural minority to be told to "Get away," and to be forbidden entrance to the school playground games. But we routinely allow this to happen to girls. They are the last acceptable scapegoats.

In high school and junior high, girls are also expected to behave in certain ways which have nothing to do with their true interests and capabilities. If a high school boy came in to talk with the counselor he might say something like: "There's this girl I go out with, and she gets all A's, and she's on the varsity swim team, and she's president of the class. She can do everything and I can't stand that. I'm tired of having everybody make fun of me because I'm Wonder Woman's boyfriend. I want to find someone who will look up to me." The counselor would probably understand that feeling and, perhaps, if she knew the girl, might suggest that she sort of "tone it down" a little—if she wants to hold on to this young man.

Now let's try that story the other way around. Imagine a girl coming in to the counselor and saying, "There's this boy that I go out with. He gets all A's, he's on the varsity swim team, and he's president of the class. I'm tired of having everybody make fun of me because I'm Superman's girlfriend. I want someone who will look up to me." I don't believe the counselor would understand that. We are supposed to appreciate a boy's achievements and value his efforts. But girls get a quite different message which says, "Don't be an achiever," and especially, "Don't be better than the boys."

As to what education should do for girls and women, I believe that we can do no better than take for our yardstick a quote from a woman who wrote a book 200 years ago. The book is *The Vindication of the Rights of Women* and the author's name is Mary

Wollestencraft. She wrote another book called *On the Education of our Daughters*. I commend both of them to your attention. Wollestencraft wrote that the "perfect education" for a woman is one which renders that women "independent."

Many people believe that education already renders a woman independent but it really doesn't. Education, like the rest of society, is caught up in what I call the Cinderella Syndrome. The myth that holds that a girl only has to work for a little while until Prince Charming comes along and sweeps her off her feet, and then she'll never have to work or want to work again for the rest of her life. She will, in short, have no need to be independent. She and her Prince will both live to be 100 years old and they will die on the same day. That is the myth. The statistical reality is:

- Forty per cent of the American work force is now composed of women.
- If a woman remains single she can expect to work for 45 years.
- Even if a woman marries she can expect to work for 25 years.
- The divorce rate is up 109 per cent since 1962 and rising.
- In divided families payment by the father for child support is nearly non-existent, and enforcement is even worse.
- The median income of a fully-employed woman with a college degree is less than that of a fully-employed man with an 8th grade education.
- The majority of old people who are poor are women.

These are persuasive statistics which education must begin to change.

It is really a question of independence. Society has never fostered independence in women, and we

need to ask why. What is everybody so afraid of? What terrible thing is going to happen if we raise our daughters to have equal access to the seats of power in government, labor, business, or the church? Why have we worked so hard all through her school life to tell a girl that her place is in the doll corner, that she must trim her aspirations and abilities so that they will not conflict with those of some boy or man?

And we need to look at what is happening to that boy or man as well. We all know by now that men outnumber women in mental institutions 2 to 1. But a new and horrifying statistic is that from the age of 15 downwards, boys outnumber girls in first entries to mental institutions 7 to 1. What kinds of pressures are being put on boys? What are our real expectations for boys? What does it do to a boy and a man to carry forever the burden of Prince Charming with all the resultant total responsibility for so many lives?

We must stop raising girls to be subordinates and we must stop raising boys to expect them to be so. Childbirth is now defined by law as a temporary disability. There is no gene that I am aware of that says that childcare can only be done by persons with uteri. Nor is there a sex-related gene marked "housework." Childcare can be done by any loving parent of either sex. Housework can be done by anyone willing to do it.

We must give girls the space and encouragement they need to grow as far and as broadly as their capabilities will allow and we must give boys the reassurance and support they need not to be threatened by the achieving girls so that they can grow to be men who are not afraid of achieving women. When we have accomplished those two goals, we may have done more for the betterment of society than we can presently envision.





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New Curricular Patterns to Meet Adult Needs: Different Strokes for Different Folks

**Dr. Fred A. Nelson
Nova University**

Most open learning systems have been developed specifically to satisfy adult learning needs and to meet the adult where he or she is at, both geographically and educationally.

Dean Pagano and I will discuss briefly how some of these needs have been determined recently, and then we will describe some examples of curricular responses to these needs. Some of these curricular patterns follow a structured or systematic approach — what I might call the "Alcoholics Anonymous" approach to the curriculum. Others are idiosyncratic or individualized, or what might be characterized as the "Salvation Army" or "United Way" approach. My examples will be of the structured or "AA" variety, and Dean Pagano will be our spokesman for the "United Way".

In the past five years or so, it seems to me that learning needs of adults have come into sharper focus and have been determined in at least four dif-

ferent ways: first, they've been determined nationally by a judgment of a national ministry of education or Federal Office of Education; second, they've been determined by systematic market surveys, which have been national, regional and local; third, they've been determined by asking directly adults in organized groups or as individuals what their needs are; and fourth, they've been determined by the "gut" feeling of educational innovators who have developed and offered programs and then found out who would enroll. Let me mention some examples of these four methods and their effects.

In some countries, including our own, learning needs of adults are often equated with national needs or priorities, and these needs are determined centrally at the national or federal level, by ministries of education or the Office of Education. In Israel, for example, the Ministry of Education and Culture and a study commission determined the three separate but related educational needs of adults which should be addressed by the new Everyman's University: first, to upgrade the existing corps of elementary and secondary school teachers, in-service education if you will; second, to provide a "second chance" to students who, for whatever reason, had fallen short of completing secondary school or possessing the Bagrut (matriculation) examination; and third, to provide continuing education for adults able to profit from it.

Iran is a country in a hurry. It, like Israel and other countries as well, followed a "me too" reflex after the creation of The Open University in the United Kingdom. The Free University of Iran was established by a directive of the Shah, (a *sine qua non* in Iran) in March of 1972. Its purposes, once again, are equated to national needs. In this case, it plans to have a curriculum and an open delivery system, first of all, to produce more teachers, pre-service training if you will; second, train paramedical technicians; third, train people in rural development; and fourth, offer continuing education. There are no market surveys in either Israel or Iran; just important national priorities determined centrally.

The Open University in the United Kingdom also was a response to clear national needs. Its planning committee, in 1969, stated that "The main work of the Open University will focus upon adult students," at both undergraduate and post-graduate (graduate in U.S. terms) levels, but also "providing post-experience courses" from the outset. The remarkable success of the undergraduate program of The Open University has clearly occupied the center stage. The OU experience with independent study and research at the post-graduate level, as well as with post-experience, or continuing education courses, have been kept in the wings. I personally became more interested in the many and

varied problems the OU is having with its post-graduate program and its post-experience courses which, to change metaphors, have been pretty much locked up in the attic like a crazy uncle or senile mother-in-law. The post-experience courses, unlike the undergraduate courses, are expected to be self-supporting like many continuing education programs in our own country. The OU is now locked into a very expensive, or capital-intensive, system of course production. One problem about developing specific post-experience courses at the OU is how to develop narrow enough courses which are relevant to a specific category of adult learners, but which will have large enough and long enough usage to be economically viable. This whole problem has been turned over to Sir Peter Venables as chairman of a new Planning Committee for Continuing Education, since Sir Peter was chairman of the original planning committee for the OU in 1967 and 1968.

In our own country we all can name a number of educational needs of adults that have been determined nationally and by judgment. The Newman II Task Force believed that American adults need regional examining universities. The Congress feels a need for improved education of law enforcement officers, and millions of dollars of Law Enforcement Assistance Administration funds and countless LEAA college and university-based programs are a result. NIE believes that the University of Mid-America meets, or will meet, specific adult learning needs in my native Nebraska and surrounding states. Each of you can add your own other examples to this list.

The second way of assessing adult educational needs, and one that is more a creature of the 1970's, is the market survey, Madison Avenue moving into the groves of academe. The Planning Committee of The Open University set the pace when it commissioned a survey by the National Institute of Adult Education of the interest of the British adult population in the then-proposed Open University. A random sample of 3,000 adults over 21 years of age was selected, and of them some 70 per cent returned the questionnaire. About 5 per cent were "very interested" in the OU, and only 0.9 per cent fell into the "I will certainly be one of the first students" category. But 0.9 per cent of all adults in England is still a lot of people, and an estimate of between 34,000 and 150,000 persons intending to register in the OU was the result.

In our own country, may I remind you that the Commission on Non-Traditional Study, with which I worked in 1972, also commissioned a national Adult Learning Survey, subcontracted to the Response Analysis Corporation. Purpose of the survey was, among other things, to update the Johnstone and Rivera Study of 1965. I commend to your inter-

est Chapter 2 and particularly Appendix A of *Planning Nontraditional Programs*, by my former colleagues Pat Cross and John Valley, published by Jossey-Bass, which goes into detail regarding this survey of adult learning. The reviewers of the data found that some of the results "will be sobering for academic professionals, such as the respondents' relatively small interest in academic subjects as compared to vocational or avocational topics." Furthermore, they concluded that "educational market surveys such as this one have consistently shown a sizable discrepancy between stated intentions and actual behavior—between an interest in some kind of study and actually enrolling for the study." As examples, only 8 per cent of the "would be learners" in the national adult learning survey were interested in a four-year degree and only 5 per cent were interested in an advanced degree. But, as in the OU's national survey the small percentage still represented a good many people. Eight per cent of 100 million adults would be eight million potential new "would be" adult learners.

Those are two examples of national market surveys to determine adult educational needs. Here's another. In California, the California State University and Colleges' Commission on External Degree Programs has undertaken a number of local and rather specific market surveys, such as the one conducted in Orange County. These surveys revealed limited but specific interest in some potential upper division and graduate-level external degree programs, particularly those directly related to career advancement.

I should also mention the market survey conducted in Nebraska by SUN, now UMA, which resulted in the first courses to be produced by SUN: Accounting and Introductory Psychology. I don't know if anyone has had the courage to criticize this survey in public before, but I'm willing to do so. First of all, in my opinion, the questions in the survey were too generally worded. More important, the interpretation of the results by academics may have been faulty and even self-serving. What the adults questioned may have wanted was advice on how to save money on their 1040 tax return rather than double entry bookkeeping, or how to understand better their spouse and their children rather than an academic version of Psych 101. But only time will tell what the adult wants, will put up with, and will pay for.

The third way adult needs are assessed is simply by asking them directly, either in semi-organized groups or as individuals. Here we come to the Alcoholics Anonymous and United Way approaches to the curriculum. One gathers a group of hope-to-be reformed alcoholics and asks them what they need to help them reform. Other such groups

could be lawyers, pharmacists, auto mechanics, teachers, farmers, school administrators, basket weavers, public servants, etc. Nelson's first axiom is: the more narrowly defined the target student population, the more appropriate or relevant can be the curriculum. It's like using the rifle rather than the shotgun to "hit" the educational target. Be reminded here, however, of the problems the OU is having in developing narrow enough post-experience courses.

The other approach is by asking individuals their educational needs. This might be the "United Way" or Lucy's standing offer of psychiatric help for five cents: Tell me your needs, and I'll help you develop an individualized program to satisfy those needs.

The last way adult needs are assessed is by the "gut" feeling of the educational innovator or administrator who believes he or she **knows** the needs of adults. A program is offered, not just a hypothetic question on a market survey, to see who will buy and whether it will fly. The actual clientele may not be the intended clientele, but nothing succeeds like success.

Let me now describe three different and highly structured curricular responses to specific educational needs of mature adults. These happen to be the three quite centralized external degree programs I now know best, since they are the three national graduate programs of Nova University: first, the *National Ed.D. Program for Educational Leaders*; second, the *Ed.D. Program for Community College Faculty*; and third, the *Graduate Program in Public Administration*. Let me also assume that there are one or two people here who know little or nothing about Nova University, a situation about to be rectified. Nova is a unique, private, independent, and non-profit university located in Fort Lauderdale, Fla. The University was chartered by the State of Florida in 1964, and it was fully accredited as a graduate only university by the Southern Association of Colleges and Schools in 1971. The University maintains a physical oceanographic laboratory on a 10-acre site in Port Everglades, and has its main 200-acre campus 10 miles inland. The main campus houses Nova's resident Law School, which will have over 300 students next fall, a cancer research institute, our Life Sciences Center, and the Behavioral Science Center. Nova offers the Ph.D. only in residence and only in Behavioral Science, Biological Science, and Physical Oceanography.

Ever since its inception over 10 years ago, Nova has been committed both to excellence and to imaginative approaches to graduate education.

In early 1972, Nova first offered its *National Ed.D. Program for Educational Leaders*. The primary purpose of this program is to improve leadership of

existing public elementary and secondary school principals, and for this reason the program's target audience is clearly defined. Applicants to the program must already have a school administrator's license, a master's degree from an accredited institution, and be currently employed in a public school leadership capacity. In other words, mature adults already involved with and committed to the profession. Furthermore, this program seeks to focus on real-life situations, to make maximum use of the top talents of outstanding scholars and practitioners from the entire nation, and to provide a national perspective to mitigate the provincialism now present in local school systems and many local universities.

The program and its curriculum are guided by a national advisory board composed entirely of eminent practitioners. Alonzo Crim, superintendent of schools of Atlanta, is the current chairman. The practitioners, not in-residence academics, have defined the eight curriculum study areas which include: Curriculum Development, Educational Policy Systems, Evaluation, Finance, Managing the Schools, Resources for Improving Education, Supervision and Technology, and Systems Management. Eminent national lecturers, such as Michael Scriven in Evaluation and Jim Guthrie in Finance, meet with each cluster of Nova participants and are also responsible both for the development of the study guides and for the evaluation of each participant in that particular study area. The program is unique and a quite centralized and structured three-year regimen of study.

One central and common feature of this and Nova's other two national programs is the "cluster concept". The cluster is initially a group of approximately 30 participants, our word for "students" in these programs, and we expect to maintain a maximum of 32 clusters from coast to coast. Our three years of experience have now clearly demonstrated the efficacy of this concept and the vital importance of group dynamics and peer learning that takes place within the clusters. For this reason, once a cluster forms, no other participants are added; only attrition, for all sorts of reasons, takes its toll to make the cluster smaller.

Nova's three programs are "labor intensive" in that the national lecturers fly to meet with each cluster monthly. Video cassettes introduce the study area and the national lecturers in each study area, and some study areas, such as finance, also make extensive use of audio cassettes which can be listened to while driving to or from work. Each study area also has developed its own study guide, some of which are now in their third generation of revision.

The program also requires attending two summer institutes in Fort Lauderdale, which also has

as its purpose emphasizing the national nature of this program and to do best what can be best done under such conditions, national speakers, meetings with central staff and practicum reviewers, etc. Congresswoman Shirley Chisholm was one of the speakers at the first summer institute, called *Education USA*, in 1972. Steve Bailey from ACE, and Cy Houle, spoke last year.

Following on the heels of the *Ed.D. Program for Educational Leaders*, in 1972 Nova also developed a similar *Ed.D. Program for Community College Faculty*, with a well-defined but more broad intended clientele. Thus, a wider variety of educational needs must be accommodated. For this reason, the program for community college faculty offers three optional areas of specialization: Administration, Behavioral Science, and Curriculum and Instruction. All focus on the specific needs of community college faculty and staff.

Like the *Ed.D. Program for Educational Leaders*, the *Community College Program* utilizes a cluster of participants, often at a hosting community college, and national lecturers who meet monthly with each cluster. The advisory panel of seven individuals for this program is divided about evenly between practitioners and professors. Perhaps this is one reason why this program has a stronger research component in its third year in the form of a major research project. The first part of the program has a curriculum consisting of six core modules, somewhat similar to the study areas of the *Educational Leaders Program*, which must be completed prior to the participant's major research project.

This program has developed its own study guide, and does not use videotapes, but it does also require attendance at two summer institutes in Fort Lauderdale.

Nova's third and thus far only other national program is the more recent *Graduate Program in Public Administration*. In this case, the program, its delivery system, and its curriculum have been developed for in-career public administrators of federal, state, local, and community institutions. These public and community service managers, plus some notable exceptions, reflect a broader range of interests and experience than either of the two Ed.D. programs. Even so, the group dynamics of the cluster, which in this program meets for two consecutive days each month, is a vital educative force.

This program is also highly structured, and in some ways more traditional in content, and it leads to a masters degree in Public Administration after approximately two years and the optional doctorate in Public Administration after three years. The curriculum is organized to focus on major management roles of the mature, in-service public adminis-

trator, such as: Political Partner, Information User, Policy Formulator, Organizational Coordinator, Resource Mobilizer, Program Mover, and, for the DPA, Research and Development Directing, Systems Changing, and The Integrative Leader.

In the case of Nova's *Graduate Program in Public Administration*, its eminent national, even international, board of advisors currently consists of 20 persons, 14 of whom are practitioners in public administration and six of whom are professors of public administration. In that program, the cluster director takes on a more faculty-like role than do the ombudsman-like cluster coordinators in Nova's two Ed.D. programs.

Nova has recently received a grant of \$100,000 from the Ford Foundation to study the differences between and among these three programs. There are many significant differences, and we're anxious to learn for ourselves and for the benefit of others who might wish to develop similar programs what we gain or lose by doing things differently.

I might mention that these programs currently enroll about 831 participants in the *Ed.D. Program for Educational Leaders*, 867 in the *Community College Program*, and about 361 in the more recent *Graduate Program in Public Administration*. Of the total for all three programs, I'm personally pleased to say that about 22 per cent of all participants are women and

17 per cent are members of minority groups. I once said this with some pride to a female staff member of the Fund for the Improvement of Post-Secondary Education, to which she replied, "When 51 percent are women, let me know!"

Nova University must be the world's most inefficient diploma-mill. After three years of offering the two Ed.D. Programs enrolling hundreds of participants, Nova finally conferred its first seven Ed.D. degrees on March 7, which included three females and three blacks, including one with overlapping membership.

The access barriers to undergraduate education for women and minority group members largely have been broken down. The challenge of the present and the future is to provide access to more positions of real leadership and influence for more women and minority group members.

Nova's three national or open learning graduate programs clearly do reach out to people where they are geographically and do meet their educational and professional needs. We hope that our programs will help to improve education and public service in America and to provide people with the skills to improve not only their own lives, but our society. By carefully developing curricula to meet the specific learning needs of adults, we and you can hope to help achieve these ends.

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Ed.D. Program for Community College Faculty
Nova University Graduate Program in Public Administration



Jules O. Pagano is currently serving as dean of special programs at Florida International University in Miami. Dean Pagano developed the Florida State University System External Degree Program. He is the former executive director of the Adult Education Association; former director of adult education for the U.S. Office of Education, and former director of training for the Peace Corps. He currently serves as vice-chairman of the Cooperative Assessment of Experiential Learning (CAEL) project.

New Curricular Patterns to Meet Adult Needs: Different Strokes for Different Folks

Jules O. Pagano
Florida International University

My commitment to nontraditional higher education extends from my experience with workers' education, volunteerism in the Peace Corps, community service in the U.S. Office of Education, and a short period as executive director of the Adult Education Association. This experience has naturally caused me to be concerned with new curricular patterns for adult learners.

When the opportunity came for me to be part of a new university in a growing metropolitan area, my interest in nontraditional learning led to my developing the external degree program for the State of Florida.

Since then, I have been actively involved in the Cooperative Assessment of Experiential Learning project, funded by the Carnegie and Ford Founda-

tions, and administered through the Educational Testing Service. My participation in this project has been to develop instruments to assess the higher education learning outcomes from lifework experiences.

My work as a member of the executive committee of the Union for Experimenting Colleges and Universities has more recently been to explore curricular development for possible new degree programs.

From the perspective of these experiences, I shall discuss new curricular patterns which relate to adult needs. The first aspect is a comparison of curricular designs; second is a key issue in the assessment of experiential learning; and the third explains two individualized approach models—one at the baccalaureate and one at the doctoral level.

The curricular pattern that I will discuss is the external degree. This is not a new kind of degree—non-baccalaureate or non-doctoral. Instead, the external degree is a different curricular pattern using many options for learning and demonstrating competence.

Comparison of Curricular Designs to Meet Adult Needs

External degree programs are easily recognized by their break with the rigidly structured pattern of the traditional daytime programs, which are replicated in colleges and universities in every state. External degree programs characteristically admit a person to study what he does not know, at times and places convenient to him, in methods of study which are congenial to his learning style, at a pace adjusted to his talents and available resources, including one of the most crucial resources—time. Finally, they provide for an assessment of his or her achievement in an established program.

Degrees designed especially for adults fill a vacuum in the educational environment of the American people. Traditional degrees, even where offered in an extension format, are at best limited in their appeal, and at worst insensitive to the phantom curriculum of life.

This vacuum is somewhere in the realm between traditional degrees and the familiar non-degree offerings of enrichment, job training, and re-training programs in higher adult education.

At the risk of oversimplification, the people in the vacuum often share these characteristics: they are beyond the age of continuous full-time schooling, they are repelled by the mechanistic application of course credits as the basic evidence of

learning's required for a degree, they are hungry for a chance to learn what they do not know, and they are sensitive to the scholarly community that gives degree recognition to their academic achievements.

Institutional Approaches to the Need for External Degrees

The idea of open access to higher learning in America is dateable at least back to 1865, when Ezra Cornell gave the school motto to the university which bears his name: "I would found an institution where any person can find instruction in any subject." More than a century later, the wisdom of his vision is abundantly clear with one further insight furnished by the intervening years: many institutions are needed to provide the opportunity for any person to find instruction in any subject.

External degrees are one response to the needs of adults today for general access to post-secondary education, and have been offered by a variety of institutions.

External degrees have specific requirements. In this respect, they do not differ from any other degree in higher education. But their particular requirements differ markedly from the traditional degree requirements. Figure 1 illustrates differences in the areas of admission, registration, residency, activity schedule, knowledge content and its application, and completion. (Completion includes program elements, proficiencies, and application of non-programmed learnings).

The analysis is limited to a comparison of traditional degree requirements with external degree requirements. The line of demarcation between the two is clearly discernible.

A pivotal lesson to be learned from the comparison is that the traditional degree is designed for all candidates and the external degree is designed for individual candidates.

The traditional degree requires the individual to fit the highly structured program of an institution; the external degree requires the institution to accommodate to the widely diverse natures of individuals. The traditional degree requirements are generally and specifically the same for all students; the external degree requirements are generally the same for all students, but the specific requirements are individualized. Even so, the external degree programs vary a great deal in the amount of individualizations in their specific requirements. In some of the seven areas used in the Figure 1 analysis, an external degree program may be completely individualized, while in some areas it may be uniform in its requirements for all students.

TRADITIONAL DEGREE REQUIREMENTS

Admissions—First enrollment—Graduation from an accredited secondary school. Variations include provision at some institutions for admission on a GED or similar equivalency; some institutions require upper ranking in graduating class; some require above-average performance on nationally standardized tests.

Transfers—Accepted only from accredited institutions of higher education; a grade point average of at least "C" for undergraduate transfers and of at least "B" for graduate transfers.

Registration—At the beginning of a semester or quarter.

Residence—For the undergraduates, the senior year or $\frac{3}{4}$ of the last two years; for graduates, $\frac{3}{4}$ of the masters' and one year for the doctorate.

Activity Schedule—Classes held at fixed hours in a dated schedule for a 16-week semester or a 12-week quarter; credits awarded in Carnegie Units, e.g., one semester hour of degree credit for 16 clock hours in class.

Content (Knowledge)—Course content replicative in accredited institutions; textbook centered; credit transfer routinely administered "by the book."

Content (Application)—Laboratory experiments and library problem assignments replicative in accredited institutions; written manuals and instructions commonly available; centered in campus facilities; credit transfer routinely administered "by the book."

Completion—

1—Carnegie Units: for undergraduate degree, 128 semester hours; for a masters, 32 semester hours, frequently plus a thesis; for a doctorate, 64 semester hours, usually plus a dissertation.

2—Proficiency: (on examinations or other assessment). Established course by course.

3—Application of non-programmed learnings: none for graduate degrees; upper limit of $\frac{1}{4}$ common for undergraduate degrees by advanced standing examinations and recommended equivalencies by the Commission on Accreditation of Service Experience.

EXTERNAL DEGREE REQUIREMENTS

Entry to program by any individual who has evidence of readiness, e.g. transcripts from accredited institutions, certificates from company or proprietary schools, scores on nationally normed tests, publications and creative works, employment history, faculty audited demonstrations of competency, participation in informal adult education programs, records of public service, recommendations of knowledgeable colleagues.

Any day of the year.

Varies; no standard pattern, ranges from zero to a few weeks; no program requires as much as a full semester in residence.

Emphasis on independent study; group sessions at times and places convenient to the students; no standard pattern for the assignment of Carnegie units or their equivalents.

Program content tailored to individual needs and interests; emphasis on student moving ahead from what he knows, no established routine for inter-institutional transfer of candidates' achievements.

Systematically exploits opportunities for learning and use of learning in the off-campus world of the learner; no established routines for inter-institutional transfer of candidates' achievements.

Satisfactory demonstration to the institutional faculty that the planned program was followed; expectations stated in terms other than Carnegie units, e.g., process and/or levels of competency.

Faculty and/or nationally normed tests for topics or broad areas of knowledge; faculty committee review of performance of contract (or other individual planned program).

Aggressive in search for degree applicability of extra-collegiate learnings, e.g., company training, programs, work experiences, travel, creative artistry, published works, proprietary school courses, performance on CLEP and similar tests, participation in short courses, conferences and other non-credit higher adult education.

Figure 1

Measurement and Negotiations

There is a universal assumption that not only can learnings from experience be identified, and not only can students articulate and demonstrate them, but these learnings can also be measured. A corollary assumption is that the more accurate (valid and reliable) the measurements of learning, the closer one is to the desired goal—that of granting credit for experiential learnings.

While these assumptions are by no means false, there is a tension present; the tension in our institutions of higher education between the idealistic demands of measurement on the one hand, and the present practical need for improved and usable assessment techniques for cost-effective experiential education programs on the other. The pull toward ever greater accuracy of measurement of specified experiences seems irresistible, largely because the opposite end of the spectrum—the arbitrary and capricious awarding of credit for any experience—is clearly unacceptable.

On the surface, it would seem that the farther we move from arbitrary practices in awarding credit and the closer we come to accurate measurement of learnings, the better are our assessment techniques and, in general, the better job we are doing of awarding credit for the learning outcomes of life-work experience. Because of this, when one attempts to place a presently existing experiential education program on the continuum between the two methods, a tension is created between where the program stands on the continuum and the pull toward the goal of accurate measurement. Many existing programs have moved away from the arbitrary and capricious awarding of credit for any experience, but few would claim to be very close to the opposite end of the spectrum at the present stage of their development.

When one examines the external degree program at Florida International University, it becomes clear that what happens most often in the

awarding of credit for work experience is a process of negotiation between the faculty evaluators or advisors and the student. The student appears with documentation for his or her previous experience, and negotiates with the faculty members on the basis of his or her future professional and non-professional goals. The faculty members, who can neither award credit arbitrarily nor measure the student's learning accurately, must negotiate the appropriate award of credit with each individual student. On the faculty members' side, this negotiation takes place in the context of the faculty members' sense of professional standards for baccalaureate-level work in their discipline.

This model of negotiation is central to the procedure of awarding credit for prior experiential learning, but it is a characteristic which goes beyond this to involve virtually every other aspect of the student's degree program. In the light of his own future goals, the student has much to say in designing the remaining academic work which must be completed for the degree. The faculty members negotiate each student's study plan in the light of his own future goals; the student has much to say in designing the remaining academic work which must be completed for the degree. The faculty members negotiate each student's study plan in the light of that student's personal goals, as well as in the light of their own conceptions of what the degree means in their field. The negotiation model has been recognized as a valid and widely used model for the award of credit and the design of curricular and nontraditional educational programs.

When the negotiation model is added to the continuum between the arbitrary awarding of credit and the accurate measurement of learning, the problem is that the pull toward accurate measurement is still operative. While no one would deny the need for more valid and reliable methods of assessment, the bias in favor of the ideal of accurate measurement tends to obscure the positive value of the negotiation model.

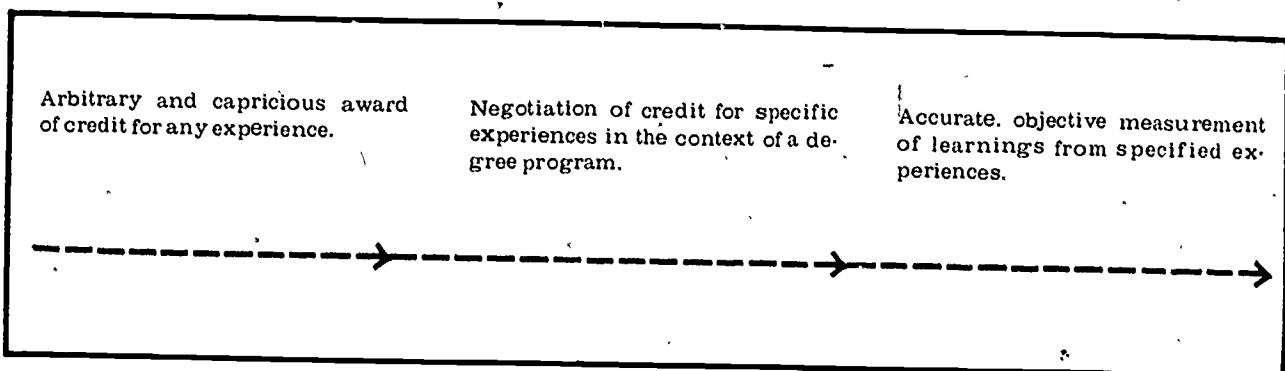


Figure 2

One important value of the negotiation model is its present usefulness in actually awarding credit to students with the aid of the rudimentary assessment techniques which have thus far been developed. A major concern of the FIU external degree program, and of many similar programs elsewhere in the country, is to assist faculty and students in arriving at some mutually acceptable decision about the awarding of credit for lifework experience. The negotiation model is indispensable to the accomplishment of this objective because of its practical utility.

A second value of the negotiation model lies in the effect it has on the student-faculty relationship. The measurement represented by testing is unilateral—the student has no role in the process other than to be measured. The process of negotiation, on the other hand, is bilateral in that it offers the student a positive role in the documentation, articulation, and explanation of his own competencies. The opportunity for negotiation creates a dialogue between faculty member and student which in turn reinforces the learning process, especially in the design of future study plans. Student and faculty members, in effect, negotiate as equal parties in a matter in which they may have different interests. This sense of parity between student and faculty member is essential to the satisfactory functioning of a nontraditional experiential learning program.

Given the usefulness of the negotiation model and its desirability in terms of the student-faculty relationship, there is still a clear need for more objective standards with which to negotiate. The development of these standards must go hand-in-hand with the development of more accurate measuring devices. However, the emphasis on developing better measurement devices should never be allowed to overtake the objective of maintaining a system that works in the process of negotiations between student and faculty member.

Once the discrepancies between a given student's present level of abilities and the level of abilities expected of him or desired by him are openly evaluated, the design of study plans can concentrate on eliminating these discrepancies.

On the other hand, people truly in love with what they are doing care about doing it well and don't fear intelligent assessment of any discrepancies. What they do fear is inept criticism. That is why development of the art of assessment—both of organizations and individuals—is so important.

Individualized Delivery System of Florida International University

Florida International University has chosen to work on problems of experiential learning for

number of reasons. The first reason has to do with the nature of FIU's external degree program. Florida International University is a public, upper-division institution in the Florida State University System with approximately 10,000 students in a College of Arts and Sciences and five professional schools. FIU administers the State University System's external degree program through its Division of Institutes and Special Programs. The external degree program, which currently enrolls about 140 students, offers a nontraditional, alternative route to achieving the degree offered by the College of Arts and Sciences and the professional schools.

The degrees offered are the same degrees as the regular degrees offered by the college and the schools, but they are achieved through alternative means. All degrees offered by the College of Arts and Sciences, the School of Health and Social Services, the School of Technology, the School of Business and Organizational Sciences, and the School of Hotel, Food, and Travel Management may be earned through the external degree program.

Many persons have accumulated non-college experiences that can be translated into college credit. By various methods of evaluation, the faculty of FIU is able to assess a student's competence level and grant advanced standing accordingly. Methods of evaluation range from the standardized College Level Examination Program (CLEP) to individual written and oral presentations before persons with established credentials in the disciplines. There is no minimum or maximum number of credits the faculty may award.

Examples of work and other life experiences which may be considered for credit are: in-service training, short courses, continuing education, correspondence studies, seminars, travel, and professional occupational experience.

Although most external degree students take some formal classroom work as part of the educational contracts, classroom instruction is not required. When it is clear that classroom work is unsuitable or impossible for a particular student, arrangements for independent study, conducted at home, on the job, and off of any university campus, are worked out through reading lists, research papers, and educational projects.

The entrance requirements for the external degree program administered by Florida International University are:

1. Florida residency,
2. completion of two years of college studies or the equivalent,
3. commitment to independent study,
4. submission of detailed application forms.

5. acceptance as an external degree student by a faculty adviser,
6. an initial interview of approximately one-half day.

This individualized program for adults returning to college to complete degrees awards credit for learning from non-sponsored lifework experiences which are relevant to the student's degree program. As the program has evolved, the greatest concentrations of students have been in the areas of Criminal Justice, Health Science, Social Work, and Liberal Studies. Three of these are human service professions, and many of the students who major in Liberal Studies design their learning programs around political and social activities. As a result, FIU's most extensive experience in awarding credit for lifework experience has been in awarding credit for work experience in human services. Since it is anticipated that the external degree program will continue to grow in these areas, there is a clear need to improve the procedures for evaluating work experience in human services for credit.

Specialized Delivery System of the Union Graduate School of the Union for Experimenting Colleges and Universities

Ph.D. Level

The Union graduate program consists of (1) learning strategy or study plan, (2) an internship or experimental dimension, and (3) a project demonstrating excellence.

The residential colloquia is where you learn to do your thing. Opportunities are made several times a year in convenient regions throughout the country for a four-week colloquium of approximately 30 students. This four-week period at the beginning is where the student learns how to do the nontraditional program. It constitutes 2/3 of the residential requirement. Another two weeks of follow-up activity with peers and core faculty completes the residential requirement.

The individual student brings to the colloquium a network of resources he or she may use in his or her own development and program. In discussions, these may be shared so that each participant comes away with greatly enlarged awareness of persons, publications, institutions, and other potentially helpful experiences.

All of these opportunities and resources come together to assist participants in the design of their doctoral programs. Each person formulates before or during the colloquium his study plans, considers internship possibilities, and identifies some

possible projects toward which he may work. From criticisms by peers, staff, and consultants, each student gets a sense of what the UGS standards of excellence are. A student may change his anticipated program of investigation, training, and creative work after leaving the colloquium, but he should come away with a fairly firm sense of goal and direction, awareness of the effort required and quality of product expected of him, and a clear definition of first steps he will be taking.

The collegiate experience of the community of scholars is achieved by the students having an option of planning shared experiences with their fellow students and working out group activities for mutual support. These can be done in a variety of mixes and a variety of styles. These group formations and activities are the responsibility of the student, with advice and counsel from core faculty of the Union Graduate School.

The student-centered learning network has a program committee composed of a core faculty adviser, two adjunct professors, and two graduate student peers.

Each student engages two or more adjunct professors that will guide and enrich his doctoral program, as well as an identified core professor of the UGS and two graduate student peers.

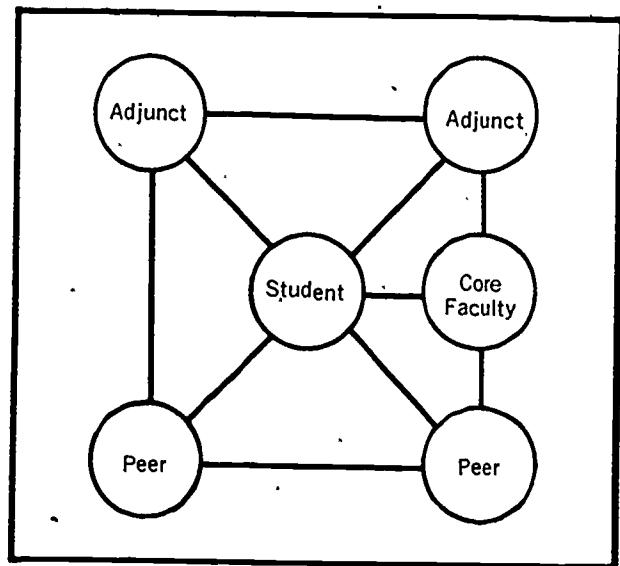


Figure 3

At least one internship is expected of every doctoral candidate during a significant portion of his tenure in the program, which is a new learning experience and not "business as usual."

Ideally, an internship should afford an opportunity to link theory and practice, bringing learning to bear upon experience and vice versa. As a

minor but important point, an internship may provide the financial base for tenure in the Union program, though an internship will not be approved simply because it brings in money.

A project demonstrating excellence (PDE) may resemble a thesis or dissertation of the kind acceptable in Ph.D. programs in other universities, but the UGS concept is broad enough to include other types of product, e.g., a publishable book, a unified series of essays or articles, a project of social change or innovation, outstanding creations in poetry, painting or musical composition. It must represent a significant contribution to our culture.

Decision on the acceptability of each PDE rests with the student's committee. A second member of the core faculty reads or reviews the project report as it nears completion, but his role is that of a consultant rather than an independent and power-wielding judge.

A student may apply for award of degree after completion of the approved program and project of excellence. He submits work in full for review and final appraisal by the program committee.

For terminar, there is a minimum of one year (average time is two years) and a maximum of four years, depending on previous work experience.

A final word on evaluation of new curricular patterns. Even at this early stage, it is appropriate to consider guidelines for such evaluation.

In this regard, I should like to suggest that we follow the four criteria offered by John Valentine in 1972. Allow me to quote from his article in *Liberal Education*:

In evaluating programs of nontraditional study, including external degree programs, four criteria stand out as particularly significant. The first is the extent to which the program reaches out to serve people now lacking access to the kinds of education they need and seek. The second is flexibility, an important aspect of which is the opportunity for individualized learning that draws on a wide variety of relevant resources. The third is quality—quality of counseling, quality of instructional materials and experiences, and quality of assessment. The fourth is financial soundness.

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Career Counseling and New Learning Options for Adults: A Necessary Connection

**Vivian M. Guilfoy
Education Development Center**

I find myself intrigued by most of the efforts which come under the heading of "new learning options" for adults. First, you take all the so-called "traditional programs," from English as a second language through graduate study (which, by the way, can be considered "new" for large segments of the adult population). Then, add the full complement of nontraditional program innovations. Next, consider the developments relating to such concepts as lifelong learning, recurrent education, and financial entitlements. And what emerges is a rather impressive array of opportunities available to adults.

If, on the other hand, you step back for a moment and think of yourself as a potential adult learner being presented with the same opportunities, your reaction might be confusion, at best. To begin with, if you were in that position, you might not even know that you were a potential learner. Even

if you did, many of you would tend to be less well-educated, less well-motivated, not by nature risk takers.

There is also some evidence to indicate that more than half of you would be interested in some form of career-related study. Some of you would be deciding if education or a career is right for you. Some of you would find it necessary to enter the world of work for the first time or reenter it after a long period of absence. Others of you would be dissatisfied or under-employed in your current job and wish to change your career, others of you would be interested in expanding your skills and knowledge to enhance your present position. All of you might legitimately be asking, "Is education for me? If it is, what kind is best for me? What will I be able to do with it? What are all these new offerings—are they fads, or are they useful? Will education be worth the effort and expense?"

If we believe that education can play an important part in helping adults develop careers, then we should be helping adults learn how to define career goals, make decisions, use learning opportunities to reach goals, and, I would argue, also help people make a deliberate decision not to engage in education or a career if they feel it is inappropriate for them. The particular kind of help which connects people with options is what I would like to define as the process of career counseling.

What, then, is the role of career counseling for adults? To answer this, let's first consider the career development needs of adults.

Historically, life patterns were described in rather static ways. First came childhood, then full-time learning, then full-time work or childbearing, and finally retirement. But, as we know, and to paraphrase an old cliche, the only certainty is change. Economic developments, social priorities, individual values, and needs are constantly undergoing revision. An individual faces a number of important career decisions, and he needs to examine what impact these decisions have on personal and family situations, economic stability, and personal fulfillment. Based on our experiences within the Career Education Project with home-based adults, and the growing literature on adult education, we find that adults share a number of common needs:

1. **They need a better understanding of their own abilities, interests, values, and goals.** Raising questions about who I am, what's out there for me, and how do I get there can produce great uncertainty and anxiety for adults—particularly adults 30-60, who may feel that this is their last chance to make a change.

For those considering nontraditional options, there is a need to assess past experiences in definitive ways and to confront directly whether they are able and willing to work independently.

2. **Adults need information about career trends, opportunities, and requirements.** Despite their experiences, adults often have a very narrow perspective on what is available in the world of work. They must investigate more carefully the range of career fields available to them, explore more carefully what people actually do on the job, and gain a clearer picture of the competencies and credentials required to enter, perform effectively, and advance on the job.
3. **Another critical need is information about education and skill training opportunities.** Adults need to identify all possible learning options which may help them reach their goals. They must learn how to evaluate and make choices among these options, and draw on many different kinds of human and material resources to construct learning and experience packages.
4. **A related area of need is information about services in career-related problem areas.** In the process of figuring out career goals and educational requirements, an adult should be prepared to identify the potential constraints which could prevent participation in education or getting a job, such as financial aid, discrimination, need for child care, testing, personal counseling. Then he or she needs to locate and use supportive services already available in the community.
5. **An adult needs help in developing and implementing career plans**—i.e., putting together all the information and coming up with both long-range plans and immediate first steps. At this point, one might assume that the adult is on his or her way. In reality, the adult must engage continuously in the process of assessing and reassessing needs, identifying goals, and finding the most appropriate strategy to reach those goals.

In our experiences we have also found that the amount and kind of help adults need will vary widely. In some instances adults need only encouragement or confirmation of plans which they have been thinking about for quite some time; for others, information is a critical factor; and for still others, more intensive development of goals and plans, reality-testing, and problem solving is crucial.

What, then, might be the characteristics of a career counseling service which is designed to meet the career development needs of adults? Interestingly enough, these characteristics parallel the characteristics which are frequently used to describe nontraditional learning:

1. The service should be convenient and easily accessible to the potential and current learner; it is important to bring the service providers to the people rather than asking people to come to the service providers.
2. The service should also be flexible and responsive to a broad range of individual needs. Individuals should be able to enter and exit from the service at any time and to use the service when they need it and in ways they can profit by it.
3. In addition, the service should have a reliable, up-to-date, and localized information base to promote informed planning and decision-making.
4. The service should also facilitate effective use of those human and material resources which are already available in both informal and formal settings, in the community and the home—not duplicate existing ones.
5. The counseling service should include an appropriate mix of professionally trained

specialists and peer staff who can provide information, guidance, and referrals in the context of human problems.

6. The service should also be able to locate and serve people who are hard to reach and who are traditionally least well-served — using outreach strategies which insure that the message gets to the right people in the intended ways.
7. The service should be accountable. It should actively learn about the target population, about the process of helping, about the results of the service, and about the reaction of those who are served.

As a research and development model, the Home and Community-Based Career Education Model III has been addressing the career-related needs of home-based adults (those 16 or older who are not working full-time or attending school on a full-time basis). Operating in Rhode Island since 1972, we have served over 5,000 adults who wished to develop a career focus and select appropriate routes to goals. I think that an approach such as ours, illustrated in the film I brought for showing, has important implications for both potential and current participants in education, particularly those interested in nontraditional learning.



John Summerskill is vice-president of Educational Testing Service in Princeton, New Jersey. He is the former director of the Office of New Degree Programs for the College Entrance Examination Board and ETS. He has also served as president of San Francisco State University, a position he assumed after 12 years as a faculty member and vice-president for Cornell University. He has been active in projects devoted to helping students cope with the complex system of higher education.

The Educational Passport

**John Summerskill
Educational Testing Service**

The Educational Passport is a service which is being developed at the Educational Testing Service for students or other individuals in order to facilitate their entry to school or college or employment.

In simplest terms, the passport is an accumulative record of an individual's educational and other accomplishments, a record which the individual prepares and owns and uses. At the Educational Testing Service, we photograph documents supplied by the individual, and by institutions at the individual's request, and we produce a wallet-sized piece of microfiche containing all the documents. The individual receives his records back along with the passport, and ETS forwards copies of the passport to other institutions which the individual designates. Once a passport has been prepared, the individual does not need to gather all his records together each time he wishes to present his credentials. Consequently, much busy work

is eliminated for all concerned. Passports can be brought up to date easily whenever the individual so requests.

The initial idea came from our participation in the work of the Council on Nontraditional Study. Additionally, we had before us all the information collected by John Valley, director of the Office of New Degree Programs at ETS. From this work we saw the high mobility of the American student pursuing post-secondary education. We saw a dramatic increase in the number of Americans engaged in recurrent and continuing education. We saw a new interest on the part of colleges and universities in providing instruction at times and in places convenient for students who are employed, or married, or in the military services. We saw a growing willingness to recognize and grant credit for learning which takes place outside the classroom.

These emerging characteristics of post-secondary education in the 1970's indicated a need for a process by which individuals could accumulate and present their educational accomplishments as they move from school to college, college to college, college to job, and job to college. Fortunately, the Lilly Endowment also recognized this need, and a year ago made a grant of \$100,000 to ETS to begin development of the passport.

During the past year we have undertaken three major developmental activities:

1. We further defined the Passport concept, and we developed guidelines and procedures for preparing Passports.
2. We discovered some technical problems and invented some technical solutions.
3. We investigated various potential uses of the Passport, and we obtained reactions to the service from a variety of individuals.

With respect to concept and procedures, a year ago I said (publicly, alas!) that the passport "is an idea whose time has come." Now, from a year's experience, we know that the passport idea is more complex than we originally thought; the idea is more powerful; and probably the idea is more useful than earlier envisioned.

Regarding complexity, the first thought was that a single passport system would accommodate anyone and everyone. We have learned from field trials in various situations that the passport service has to function somewhat differently among military servicemen, among regular high school students, among adult part-time students, and so on. Thus, for example, we are presently exploring a separate Credit Assembly Service which would

provide servicemen with a summary of their college credits following the guidelines of CASE, the American Council on Education's Office of Academic Credit, and other academic agencies.

The passport idea sometimes brings strong reactions, positive or negative, from people in the educational world. This is due in part to the underlying assumption that the individual can own and control his or her academic records. Consequently, the passport is seen by some as representing a further shift of academic authority from the institution to the individual. This has led to much discussion about the "authenticity" of the passport.

We had some early awareness that the passport was both a complex and powerful idea, so we formed a National Advisory Council to consider the issues of authenticity and other critical matters. This committee is composed of experienced people from two-year and four-year colleges, educational associations, business, and labor. The committee met three times this past year, they contributed a great deal of useful criticism and counsel, and we believe we have reasonable and trustworthy guidelines to protect the individual's rights to privacy and the authenticity of the records.

This past year we also learned that the Passport is useful in ways which we had not predicted. For example, students in nontraditional programs often produce voluminous portfolios or protocols, and these are difficult to handle and examine when the individual moves to another college or job. The passport greatly simplifies the transmittal and storage of this information, and, because each passport contains an index, retrieval of information from the portfolio is facilitated.

The passport is a photographic rather than a computer process, so that it can accommodate qualitative material, e.g., references, work logs, course descriptions, etc., which provide a richer picture of the individual. When passports were used this past spring by recruiters from business and industry, they found that their interviews with candidates were more interesting and productive.

At the outset of this presentation I observed that we had some technical problems to solve. William Kraft of ETS designed a wallet-sized microfiche which contains the equivalent of 24 standard pages of material. Mr. Kraft has worked closely with commercial firms to make available an inexpensive microfiche viewer so that each passport owner can easily review his own microfiche material at any time. We believe that such a viewer will soon be available.

The third major developmental activity, with Jack Osander of ETS in the lead, was to obtain the

reactions of various individuals and groups concerning passport procedures. We have conducted a number of field trials, and we have learned, for example, that a wide variety of students, and others, are enthusiastic about the passport idea. However, preparing a passport requires more work of the individual than meets the eye. Materials must be collected from a number of sources, decisions must be made about what to include and in what order, an index must be prepared, etc. Consequently, as with many things in life, individuals are more likely to follow passport procedures to completion when they see a concrete application or reward for the effort. Individuals need assurance that schools, colleges, and employers will, in fact, look at their passports and use them.

Another outcome of the field trials was the discovery that people can use microfiche viewers with little or no training or instruction. We learned, for example, that job recruiters easily make use of desk-top viewers while interviewing students, and the hardware does not get in the way of the human interview process. The field trials also enabled us to improve the written instructions for

passport preparation and provided initial experience in the production process.

In the academic year 1975-76 we would very much like to conduct further field trials with larger numbers of people. Thus, we look forward to a joint effort with a number of Servicemen's Opportunity Colleges and selected military bases in which ETS provides servicemen with passports which can be used for college admissions, placement, and counselling. We are also looking for colleges and universities where experimental usage of the passport can take place—with no charge to the individuals or the institutions during the trial period. Those interested should write to Sybil Stokes, who is passport program director at ETS in Princeton.

Finally, the experimental work with passports in job recruiting and placement at Northeastern University was sufficiently successful to call for more extended use next year.

If all goes well we hope that the Educational Passport will be available across the country a year from now.



James Kraft is a program officer for the National Endowment for the Humanities, a position he has held for the past two years. Dr. Kraft is a graduate of Princeton University; studied at King's College, Cambridge, and has his Ph.D. in English from Fordham University in New York City. He taught at the University of Virginia, at Wesleyan University in Connecticut, and at *Université Laval* in Quebec. He has published two books and several articles in the field of American and Canadian Studies.

Federal Agencies Look' at Open Learning

**James Kraft
National Endowment for the Humanities**

I'd like to discuss with you, in a very general way, the reasons for the interest of the National Endowment for the Humanities in the various aspects of open learning.

First, I think that most of you realize that the National Endowment for the Humanities (NEH) is a federal agency funded by Congress to develop programs in the humanities. All of our interest centers on this fact. We are concerned to see that the humanities are a part of the major open learning programs. By the humanities we mean the specific disciplines of the humanities, such as English, history, languages, ethics, and philosophy. We are concerned with them as single disciplines, or in the various combinations. As our sister agency, the National Endowment for the Arts, is concerned with performance and creation, my remarks are not to be directed to any aspect of the arts.

Our second basic concern is in the use of various forms of the media in open learning. Our "Courses By Newspaper" is an example. Developed by the University of California at San Diego, it is a course of lectures that runs in newspapers. A reader can also send for a study guide and register for credit at a local university or college.

Our project with the University of Mid-America is the development of the course, "The Great Plains Experience: A Cultural History." This project includes a reader, a study guide, audio cassettes, television segments, newspaper articles, and learning centers. The point is that we see many ways to bring education to many people, and our concern is with the intellectual quality of the material and its various ways of being presented.

With this very broad general statement as background, I would like to consider four reasons for our interests in open learning, and then I would like to conclude with certain brief related points.

First, we want to increase the breadth of the approaches to education for the general public. This means that in a country with so many people and with the technical potential of so many means, we ought to be able to create programs of such variety and quality that everyone has access to an education. I think that as a country we have always been so concerned with making education broadly available, but we now have the technical means of broadening that concern, and NEH would like to be a part of that process.

The second point follows quite logically from this: if we have broadened the approaches to education, we should have increased the kinds of people who can have an education. NEH is concerned that at no point in a person's life should he or she be excluded from the possibilities of achieving an education. The challenge here is greater than we at first realized. It means that to achieve an open university in the United States is not the same thing as doing this in England. We must appeal to many more and a more varied mixture of people. Our open university will have to reach out to people and prepare them to be students in ways that the Open University in the United Kingdom did not consider—at least at first.

Third, we hope through the above two concerns to educate the public to its options, and the academy to one of its responsibilities. The public needs to know what options it has for an education. I think this is a relatively simple matter compared to the other—to educate the finest academic humanists that open learning is important and serious and needs their support. Let me illustrate what I mean by a very simple point. Someday I would like a person like Edmund Wilson, Lionel Trilling,

or Alfred Kazan to consider that the preparation of the major multi-media course is as significant as writing a scholarly critical book. As you know, many academics, particularly academic humanists, believe that anything less than formal, traditional education tends to be somewhat frivolous. This approach is changing, but the success of open learning in the humanities needs the best academic minds, and the Endowment is sincerely committed to trying to engage these people in the problems of open learning.

The fourth point, my final one, is based on all of the above. We hope by supporting formal, informal, and nonformal modes of education to act as one of many catalysts to excite the public, the administrators, and the academics to the great options for education in America. The three modes of formal, informal, and nonformal education are obviously not hard and fast. They do overlap, as they should, but they can be seen as representing three approaches: the formal, that is, the traditional classroom experience; the informal, that is, public education such as *War and Peace* on public television; and the nonformal mode of, for example, multi-media educational courses offered in the home. The options in each area have been so increased by technology that I think we are really overwhelmed by them, and we are fearful of them. NEH hopes to educate the public, the administrators, and the academics to the great chances we have to make education available to every man and woman who seeks it, and then to educate those who do not seek it so they will realize that they are missing one of the finest possibilities offered to human beings.

These are the four basic points. Let me end with three related and very brief points—some that I think are equally important.

NEH seeks courses that are not vocational, but that we believe are essential. For example, to know how to read, write, and speak is fundamental. And to learn to use these tools well is essential to the entire fabric of civilization. Without these basic elements we cannot effectively speak to one another nor share points of view. We can never grow. Although NEH is not usually concerned with courses that relate directly to employment, we do believe that humanities courses affect the individual and finally do relate to his or her livelihood in an essential way. I make this point, and it's a complex one, without dwelling upon it, but I think you can see that it is an important one and one that we do consider seriously.

Second, we seek new combinations of disciplines and the media to enlarge one's exposure to knowledge. We hope to open up education to open

learning. We feel that to fear and fight open learning is, in part, to fear and fight education today. I suspect that those who degrade open learning in the academy do so in part because of an understandable fear regarding their ability to live in a society that is broad and inclusive and that ques-

tions existing and established patterns.

Finally, we hope to overcome people's reluctance, in the academy and outside it, to discuss the kinds of issues which I have mentioned here, and to encourage people to engage in a solution of them.

Federal Agencies Look at Open Learning

Erik McWilliams
National Science Foundation

I don't have any firsthand experience myself with what I understand to be open learning. I studied and taught and administered in the traditional system, a state system, like most of you, I'm sure. It's that same experience with the traditional system that provokes my interest and even some confidence ultimately in open learning. My remarks are my personal opinion and not NSF policy.

Where is open learning going? Where will we take it? Or where will it take us? It seems to me that that is likely going to be determined by three dominant factors. The first is where it's been (what has been the experience thus far). The second (and here I'll admit my bias) concerns the technological opportunities and limitations. Third, what are the socio/economic/political opportunities?

I'm here to try to learn something about the first of these three, namely the experience with open learning thus far. Some open learning systems have been operating for awhile. Findings and experience, in my opinion, always have a strong influence on the near term future. (The trick is being able to interpret the results and draw valid conclusions from them.)

As I stated, I have no personal knowledge or experience with open learning, so I'll concentrate on the other two determinants. I don't claim even to know all I'd like to about them, but my responsibilities at NSF and elsewhere have necessarily provided me with some little perspective on those two.

Let me call the technology "information technology." It includes television, with which I'm somewhat familiar; it includes computing (instructional computing, informational computing) with which I'm more familiar; and it includes other audio-visual technology. I would characterize the information technology as being relatively robust at the present. I'll not lecture you about it, but I'll mention some reasons why I think so.

I think that telecommunications systems, even pretty sophisticated ones, are in place, working reliably and routinely with superior systems in experimental use. Contrast the picture that you get on your color television set now with the one that you can remember from five or ten years ago. Furthermore, compare the prices now with ten years ago. The telecommunications form of technology seems to me to be quite robust, with high quality and high reliability.

Computer-based systems and especially terminals are not yet cheap, but volume will take care of that. They'll be as cheap as television receivers before too long. There's even some interesting educational program material

that now exists and some of it has received field use. I'm thinking here of the CTW programs, programs such as the *Ascent of Man* series, and the *Dimensions in Culture* series. I'm also thinking of computer-based instructional lessons in a wide range of topics, including quite a few lessons at the level of higher education. Some of these lessons with which I'm familiar are relatively self-contained and can be (in fact are) used elsewhere right at the present time.

Another reason why I think technology itself is robust is that I find some very capable people applying these systems to instruction at all levels even though activities using educational technology are not regarded as tenurable academic pursuits. I mention also the enthusiastic response in the use especially of computer-based instruction by students, faculty, administrators, and parents.

As a final indication of "technological robustness," I mention the increasing application of computing technology as a creative and artistic medium.

I'd be happy to comment further on some of those points later.

The second major fact of life about technology itself is that it is becoming better and cheaper all the time. And there aren't very many devices and services for which one can make that statement nowadays. The hardware cost for computing declined by more than a factor of 100 since 1955, according to IBM. The cost for memory (which is a vital component for one of our computer based systems called TICCIT) has declined by a factor of five since 1971.

We can continue to count on short-term cost reductions due to such developments as large-scale integration (LSI), large memories, and rapid development of commercial markets for the same technology (for example, for banking).

Another factor that I consider to be quite promising and contributing to this robustness is "human engineering." Technology itself is basically stable and working well enough to allow engineers who are concerned with social uses to have their crack at improving systems. For example, the development of natural sounding, economic audio output in computer-based instruction is proceeding well. And research into audio input (speech recognition) is well underway.

So, technologically speaking, the media have arrived. It'll get better and better, of course, but it's already good enough in my opinion to provide the foundations for open learning (and soon even the smallest child will know it).

And yet in my opinion the prospects for rapid development of open learning and nontraditional study alternatives seem to me to be somewhat unfavorable. I may sound like a heretic at this meeting, but I say that due to economic and political considerations. I think the economies of this country and the rest of the world are ailing. It's an obvious statement. The only debate seems to be on whether it's a full-fledged depression or just a severe recession. The evidence is all around us; let me cite one example.

I was reading Science Reports the other day, and an article in there from the New York Department of Education reported that 80 out of 140 New York State private colleges may have to close in the near future. (That's awfully close to two colleges out of three!) If we've learned nothing else about economics I think we've learned the risk of making predictions, especially about swift recoveries.

A second factor that makes me somewhat pessimistic concerning the rapid exploitation of open learning is the national mood. I think it is increasingly conservative, fiscally and militarily, and perhaps even politically. People worry about and are even fearful of change, and I do find people increasingly questioning the value of higher education. I know that we have large numbers of people that are involved in the periphery of learning, but there do seem to be some increasing signs on the other side. People asking questions such as "What's the relationship of higher education to better employment? Is a professor or executive or systems analyst anymore 'satisfied' than the carpenter, the mechanic, or the clerk?"

And the citizenry is understandably skeptical of technology, as I'm sure some of you are of some of the statements I made a few minutes ago. We do become addicted to greater and greater doses of technology, but we continue to brush it off on the grounds of unreliability, hidden costs or side effects, or whether or not it's dehumanizing. We also question them on the grounds of whether or not the technology contributes in the long run to unemployment. So, in my opinion, the short-term future of open learning is far from rosy. It requires large amounts of (a) capital (delivery systems are costly); and (b) commitment and confidence. Neither is present in abundance right now.

It boils down to the question of what society's really up to.

I want to make one final reminder again before I close. The statements I just made are my own, and not necessarily those of NSF.



Federal Agencies Look at Open Learning

**Gerald T. Weekman
Environmental Protection Agency**

I hope that you all are familiar with the Environmental Protection Agency. Most audiences before which I've spoken before are most aware of the Agency as a result of its responsibilities relating to air and water quality and liquid and solid waste disposal.

There is one program for which the Agency has responsibility that probably few of you are aware of. It is one that presents, in my mind, a tremendous opportunity for open learning. In contrast with my colleagues on the panel, who talk in terms of broad generalities or the use of particular devices in open learning, I am here to identify a specific need for the transfer of technological information to a large and widely dispersed audience that must be accomplished within a very short time.

In 1972 the 92nd Congress adopted Public Law No. 92-516, which is known as *The Federal Insecticide, Fungicide, and Rodenticide Act, Amended*. This law provides that all users of pesticides hazardous either to man himself or to his environment must be certified as competent, based on standards promulgated by the Administrator of the Environmental Protection Agency. This certification must be accomplished prior to October 21, 1976, as it says in the statute, or more practically, by early spring of 1977.

The regulations promulgated by the Administrator under this statute require people who apply pesticides for hire, an estimated audience of 100,000 individuals, to demonstrate by written examination that they are competent relative to the standards promulgated by the Agency.

Private users—farmers who use pesticides on their own property in the production of agricultural commodities—must demonstrate, by written or oral examination or some other equivalent means, that they too are competent. Preliminary data indicates that slightly more than half of the existing commercial applicators in the United States are capable of meeting this requirement. Unfortunately, we do not have adequate data to assess the competence of the private applicators in relation to the standards.

As I have indicated, the law simply requires that persons demonstrate competence. The law does not provide for a training program to support the requirements for certification. But EPA, in co-operation with the U.S. Department of Agriculture, has committed itself to develop training programs to support the requirement of certification. But how may we provide training for 100,000 commercial and some 1.4 million private agricultural users of pesticides between now and October of 1976? The State Cooperative Extension Services and the U.S. Department of Agriculture have assumed the responsibility in accomplishing this task and are well down the road in plans of how to reach this audience, not to just present a traditional off-campus extension program, but more importantly to achieve a high-level transfer of information to a large number of persons so that they can satisfy the legal requirement. Extension proposes to do this by reallocation of its existing resources, its

staff, and its facilities. Estimates are that fixed and variable costs will be somewhere in the neighborhood of \$70 million.

The question that I raise here is, "What is the role for nontraditional learning, or open learning, in achieving this particular goal?" Do we have a cost-effective open learning method that can reach this widely dispersed farm audience—the 1.4 million farmers and farm managers in the country? Can we reach 100,000 commercial users of pesticides who similarly are scattered across the country? More importantly, can we assure through open learning, or classroom learning in some reasonable form, a transfer of technical knowledge so that these individuals can satisfy the requirements of the law? I am of the opinion that we cannot go on TV and present the necessary technology in a typical lecture, slide, and motion picture format and assume that these audiences will demonstrate that they have satisfied the requirements. We're going to have to do something different, and we must move very rapidly to make appropriate training available to satisfy the intent of the American public.

I've spoken only of the task that lies between now and October of '76, but just as important is what lies beyond this date. There remains the problem of providing a sound educational base for the entry of new people into the business of applying hazardous pesticides. The turnover in agriculture is high. The same is true among the commercial users. These future users of pesticides certainly will find it helpful if they can avail themselves of training programs offered by extension or vocational education in the high schools, technical institutes, or community colleges. Persons selecting an occupation in one of these fields must have some assurance that they can meet the standards promulgated under law. The EPA, the U.S. Department of Agriculture, and the Cooperative Extension Service are all willing to work toward this end. Some training materials have been developed for this program. We're open to new ideas and ready to get on with this challenge. I look forward to working with you, and I hope that it will result in a training effort that satisfies both the intent of our citizens and the needs of the pesticide applicators in our country.

William G. Harley is the president of the National Association of Educational Broadcasters, a position he has held for the past 15 years. Previously, Mr. Harley was professor of radio-television education at the University of Wisconsin, and program director of the Wisconsin State radio network. In 1954, he put the nation's third educational television station, WHA-TV, on the air in Madison and was in charge of its operations until coming to Washington for the NAEB. Currently, Mr. Harley is president of the Joint Council of Educational Telecommunications and a director of the Educational Media Council, of which he is a past president. He is vice-chairman of the U.S. National Commission for UNESCO. He served as chairman of the Educational Radio-TV Screening Committee for Fulbright-Hays Scholarships. As president of the NAEB, Mr. Harley has brought to the field a long and honored history in using public broadcasting and community telecommunications services to increase learning options for students of all ages.



Discriminating Between Open Learning, Open University, and Nontraditional Learning

**William G. Harley
National Association of Educational Broadcasters**

I want to discuss whether we are making very much progress in this whole matter of open learning.

Progress is, of course, a tricky word. And while, by some standards, the avoidance of utter collapse is real progress, I think we can rely on more affirmative measures to determine whether open learning in this country is proceeding very sensibly or very well.

About a year and a half ago, I reported to the meeting on open learning in Lincoln, Nebraska, that we were nearly finished with a study on this topic that had been commissioned to National Association of Educational Broadcasters (NAEB) by the U.S. Office of Education and implemented by the National Institute of Education (NIE).

We believed that if our pursuit of open education and open learning were focused simply on devising new ways of offering traditional academic degrees, we would be limiting the scope of its potential; we would have done less than it is possible to do; we would have burdened the development of this exhilarating new institutional concept with the trappings, however meritorious in their own setting, of traditional education; and we would have deprived millions of interested persons from essential and useful learning opportunities.

In our study, we identified six items that were considered to be essential characteristics of a "genuine article" open learning system:

1. The system must be capable of eliciting, interpreting, and analyzing student (learner) goals at the entry point and throughout the student's contact with the instructional program.
2. The system must be capable of enabling learners to participate in the program of instruction without imposing traditional academic entry requirements, without the pursuit of an academic degree or other certification as the exclusive reward.
3. The system must require formulation of learning objectives in such a way that they can serve as the basis for decisions in instructional design, including evaluation, and in such a way that they will be fully known to the students.
4. As an operating principle, the system must be capable, after reaching a critical minimum, of accommodating increased numbers of learners without a commensurate increase in the unit cost of the basic instruction: i.e., costs must not be directly and rigidly volume sensitive.
5. The system should make it operationally possible for the methodology of instruction to employ sound, television, film, and print together or as options for mediating learning experiences.
6. The system should use testing and evaluation principally to diagnose and analyze the accomplishment of specified learning objectives.

It was our conclusion that an open education system that does not acknowledge the need to move from traditional approaches toward these characteristics is not in fact very "open" at all. It is, in the classic sense, merely an extension of traditional educational practice.

All right, how do we bring about the establishment of such genuine open learning systems?

We recommend the establishment of a National Agency for Open Learning System Development.

Such a group would be an independent body, funded initially from foundation and other private sources, and subsequently by the federal government. Its purpose would be explicit: to develop open learning systems that exhibit all, or nearly all, of the functional characteristics that I have just mentioned.

We envisioned this agency as having a life span of eight to 10 years, since it is likely that such an interval will be required for its work to be designed, implemented, and operationally complete. Following that period, and based on the experience of The National Agency, a general plan for the support and operation of open learning systems should be able to be devised and implemented. The future role of The National Agency should be determined at that time.

We suggested a period of 18-24 months to prepare in detail the program that the agency should fund and implement. During this time, we believe that foundation funds and corporate funds could be raised to cover approximately \$750,000 to \$1,000,000 that would be required to carry out this initial work.

We suggested that work of this independent group would fall into three separate but very much inter-related areas:

1. investment of funds in developing open learning systems in at least four different settings,
2. continuing analysis of policy and operational questions which are known in advance and which emerge during the developmental period,
3. maintenance of an information clearinghouse for activities being undertaken in open learning.

There are at least four areas in which open learning system techniques will need to be developed. Ultimately these will bear some relation to each other. For now, they represent the basic settings in which the initial developments should take place. They will be operationally distinct, but together they will provide enough variation to be certain that the various questions surrounding the open learning system development are examined in most of the likely contexts.

The four areas of investment should be these:

1. Investment in a new institution.

Projects currently underway that are essentially campus-free could be considered; large-scale regional programs could be considered. The principal characteristic is that the new institution should embody all of the functional characteristics of open learning that were described previously.

2. Investment in opening up a current institution of higher education.

An institution that has demonstrated its desire to transform its current program of instruction into an open learning system should be identified. No single building or single campus operation should be considered; this should be an opportunity to develop traditional extension education into an open learning system.

3. Investment in activating an open learning system in a work-study program.

Numerous possibilities exist here for co-operative programs with manufacturers and industrial groups, state and local governments, and special employment efforts to train and hire the unemployed. It is suggested that this be a major undertaking, involving substantial corporate efforts combined with developmental assistance from the national agency.

4. Investment in activating the open learning system in an area of continuing professional education.

The National Agency should seek one or more areas of continuing professional education and training (e.g., medicine, chemistry, education, insurance) for the purpose of implementing the characteristics in a setting where the goals and incentives of continuing professional education will play an important role.

It is also important that policy and operational questions be examined with regard to the impact of various alternatives on the ability of the open learning system to carry out its essential functions. At this stage of the concept's development, the following areas need special study and work:

POLICY AREAS

1. Copyright: developing policies which reward and facilitate the copying of materials, while at the same time compensating owners fairly for their works.

2. Learning centers: developing policies and codes which could result in learning center spaces in publicly financed housing, in office buildings, and at other locations where open learning programs could be effectively used.

3. Finance: developing economic principles against which the effectiveness of a technology-based open learning system can be measured. This should result in new ways of examining the financing of education, both from the viewpoint of how a system is paid for and how its costs are determined and projected.

4. Faculty: reward security and incentive systems for faculty and teaching personnel will need to be established.

5. Certification: policies regarding certification systems appropriate to various learner needs and goals will need to be established.

6. Communication: the operation of the open learning system may require certain changes in the regulatory policy of the Federal Communications Commission. This will need to be studied.

7. Facilities: funding policies for learning centers and related facilities will need to be developed and changes in existing programs will need to be considered if necessary. Policies regarding support for such areas as learning centers in public housing, access to cable systems, and patterns of support for public broadcasting will need to be developed.

8. Structure: policies that will facilitate crossing state administrative and legal boundaries in establishing operating systems that need not be limited to current jurisdiction.

OPERATIONAL AREAS

1. Staff: position descriptions for personnel with capacities related to the functional characteristics of open learning systems will need to be developed; training programs for those who wish to work in open learning systems will need to be devised and operated.

2. Instruction: operation of course teams for planning and executing instruction will need to be carefully designed, including specification of objectives, learning programs, selection and use of media, testing, and evaluation.

3. Governance and management: special problems of governing, managing and adminis-

tering open learning systems will need to be identified and resolved.

4. **Finance:** developing systems for amortization of course units and complete courses; determination of various means of payment for individual courses of study.
5. **Students:** determining the market for various course possibilities; determining means by which students may participate in setting goals and objectives; assessing levels of interest in courses of study; developing means of attracting students; assessing entry levels.
6. **Student support services:** development of techniques for counseling and guidance programs; reporting of diagnostic testing programs; registration procedures; distribution of instructional and other materials.
7. **Testing and evaluation:** developing policies that are consistent with different levels of interest in various certification and reward programs.
8. **Information clearinghouse:** the development of any new concept will rely heavily on the perceptions and experiences of many persons who have associated themselves with its development. It is essential that The National Agency either carry out itself, or contract for, the collection, maintenance, and distribution of information which will be a resource through which personnel, projects, research studies, and programs can be identified and located.

That is what we recommended. What has happened?

First, as a formal matter, the recommendation has never been formally reviewed or publicly examined by the National Institute of Education. It went the way of most reports: bureaucratically acknowledged and systematically filed.

I suppose this is a minor affront that we could easily endure if the situation regarding federal support for the development of open learning systems were more widely thought to be wise, constructive, and worthwhile.

I do not want simply to be peevish about this, but I do want you to sense that it is urgent that we seek an improvement in the federal commitment and the federal means for advancing the concept of open learning in this country.

It is not reasonable to subject this task to a National Institute of Education with confused and changing priorities and goals.

It is not acceptable to subject this important institutional development to whimsical personal judgements instead of pedagogical and professional standards.

It is not useful to impose upon a potential open learning model a series of ersatz research questions whose outcome is meaningless and whose value is mainly to serve bureaucratic ends—a report for the files.

It is not tolerable that this significant effort at extending educational opportunity should be relegated to the status of a mere project in the midst of a vast panoply of government assistance programs.

It is simply not professionally sound that the objectives associated with the development of large-scale open learning programs should be the consequence of ad hoc bureaucratic preferences and variable with the annual priorities of a government agency.

These are not, I assure you, mere grievances at one particular agency or one particular program. They are symbols of the kinds of problems that are found with current procedures for government support of efforts which are intended to develop new institutional concepts in education.

In a different setting, we have seen the efforts at demonstrating satellite technology minimized by imposing educational tasks that were derived from an education commissioner's general priorities instead of the needs of the area to be served. Moreover, that effort could only marginally demonstrate satellite applications because the satellite component was known to be ephemeral—there last year, gone this.

In recent testimony before Congress, HEW urged that the facilities program be expanded to include not only the traditional broadcasting operations, but also to demonstrate the potential of other distribution systems as well. What demonstrations? For how long? For how much? Those are questions we are left to ponder, for there was no proposal and there was really no way to react, except quizzically.

There are other illustrations of the problem: a recent study by an Indiana University study team examined the federal role and involvement in children's television. While pointing out the need for federal support, the study indicates that a fair market trial for a program can take four to five years—yet most programs are funded on an annual basis. In USOE policy, the report indicates, "There is no apparent answer to the question of what should be done in case an experimental series succeeds; policy orientations and expectations are more geared to failure than to success."

I suspect you can add your own concerns and anxieties about the impact of federal involvement in funding innovative programs. The problems are not, I believe, resolvable by asking for new procedures or new people or rearrangements of the bureaucracy.

What is needed, and needed desperately in the development of open learning systems, is a Congressional mandate to do so, with a specially designated organization to carry out the responsibilities. I know that is not neat; but I know (as I hope you will come to know) that the present system has too many defects to expect its behavior to be other than what it has been.

The American people deserve an affirmative effort to make learning an open system; they need and they want access to broadened learning opportunities. The technology is available to make it possible and to make it feasible. The professional capacities that are required can be nurtured and developed; the marketing of materials can be accomplished; the costs can be afforded.

I urge you, as you contemplate all of the benefits of expanded learning opportunities, to consider the eloquent challenge offered by Sam Gould in the report from which this conference takes its name. In *Diversity by Design*, Dr. Gould has written:

Full opportunity to learn cannot be limited to the young; it must be for everyone, in any walk of life, for whatever purposes are beneficial. It cannot be reserved to a single period of life; it must be a recurrent opportunity: an opportunity to update a skill, to broaden the possibilities of a career whether old or new, or to add intellectual zest and cultural enrichment throughout life. No longer can it be the single opportunity of a lifetime; now it must become the total opportunity for a lifetime.

And then I ask you to consider whether you have very much confidence in our present procedures for undertaking the kind of long-range institutional development that will give Sam's challenge the vitality and reality that a civilized and mature society deserves.

What we must insist upon is a comprehensive scheme which will allow us to answer confidently "yes" to that question.

Technology & Delivery Patterns

The emerging patterns of delivery systems to give access to instruction by the adult learner through communications technologies were the focus of this conference theme.



John P. Witherspoon is a planner and consultant in telecommunications with a particular interest in public service applications of communications technology. Mr. Witherspoon is chairman of the Corax Communications Group and vice-president of KCET, Los Angeles. Prior to undertaking this work in 1972, he was the first principal executive for television at the Corporation for Public Broadcasting in Washington, D.C. Mr. Witherspoon was the founding chairman of the board of directors of National Public Radio. He has also served as chairman of the radio division of the National Association of Educational Broadcasters, National Educational Radio, and as a member of the NAEB Executive Committee. Among Mr. Witherspoon's earliest honors was a series of awards from the Institute for Education by Radio-Television (Ohio State University) for radio programs designed to assist classroom instruction, produced for a county school system in California. In 1968, he served as a jurist for the Japan Prize, perhaps the world's most prestigious award for instructional uses of radio and television. Recent projects deal with varied public service applications of radio and television, cable, and satellites.

State of the Art: Current Educational Uses of Public Broadcasting in Higher Education

John P. Witherspoon

Let me begin with the first recommendation of the Gould Commission report, *Diversity by Design*, the recommendation I believe is the fundamental one: "Full educational opportunity should be realistically available and feasible for all who may benefit from it, whatever their condition of life."

That's a big charge, and provides enough challenges in open learning to keep people in either communications or education going for a very long time. But it has a lot to say regarding possible uses of the public radio and television system, which is still building in the United States. I would like to discuss, in this context, four elements, not all in equal proportion. The first is the shape of public broadcasting itself, particularly as it relates to education today; the second is the common constituency of public broadcasting and education; the third is some current difficulties or impediments in using public broadcasting and other instruments of nontraditional education; and, finally, a few looks ahead.

To understand public broadcasting and its shape in the United States today, it's important to note, first, that it's a very diversified system, based on a lot of individual stations. In round numbers, there are 250 public television stations, about 160 qualified public radio stations, and a number of support organizations—the Corporation for Public Broadcasting itself, the Public Broadcasting Service, National Public Radio, regional networks of various kinds, and some organizations which are related specifically to instruction, such as the Agency for Instructional Television and the Great Plains National Instructional Television Library, which may or may not be counted as part of the public broadcasting establishment, but which are, nevertheless, very important to public broadcasting.

At the present time, something like 80 per cent of the American population is under the umbrella of public television transmission. A somewhat smaller number than that actually receive public television because of the difficulties of UHF in some areas and some of the peculiarities of terrain, etc., so the actual potential audience is somewhat less than 80 per cent of the total American public.

The radio system is somewhat smaller than that. Relatively speaking, it's still in a relatively developmental stage, and it is one of the potential growth elements that remains in public broadcasting.

Turning to the present state of work in education and broadly related fields, on an annual basis (not just a school-year basis) about 17 per cent of all the public television hours are devoted to those efforts which are called specifically instructional. That is, instruction in quite a narrow sense. If you were to focus on the same kind of work for only the months when school is in session, of course, the percentage goes up by about 30. In fact, instructional television in a narrow sense represents about a third of all the program hours produced by individual public television stations, and accounts for 53 per cent of all the time that stations are broadcasting on weekdays during school hours, so there is a substantial service continuing there, although there is some room for growth.

I have not included in the instruction category those things which have broadly curricular objectives, but which usually are not considered instruction in a classroom sense. The most obvious examples are *Sesame Street* and *The Electric Company*. The latter is sometimes used in school, but more often not, so for present purposes I'm excluding that. If you put those two together, they come to a great bulk of additional programs. In fact, *Sesame Street* and *The Electric Company* together account for 21 per cent of all the time on public

television stations—just those two programs. Instruction accounts for 17 per cent of the time; information and skills (broadly non-credit adult education, general information, history/biography, etc., as a program category) comes to another 16 percent; and other children's programs, like *Mister Rogers Neighborhood*, *Zoom*, *Hodge Podge Lodge*, etc., account for 10 per cent. Were you to take those programs as a large single category, almost two-thirds of all the time on public television stations would be devoted to this broad area of activity, ranging from instruction in quite a narrow sense to instruction in a very broad sense.

If you were to focus on televised instruction for classroom use, you would be talking mostly about programming aimed at children in grades one through six. It falls off very rapidly after the sixth grade until, in the last years of high school, it is at a very low level. We're really just beginning to develop in some of the areas of higher education and nontraditional adult education to which I alluded.

Having set a broad context, let's turn to the relationship between public broadcasting as an educational resource, and the world of American education. Briefly, I would like to observe that from time to time, people come riding out of the night expecting public broadcasting to make, on its own initiative, quite a heavy impact on traditional American education. I think that while there is a strong commitment to education on the part of people in public broadcasting, a simple side-by-side look at the scale of the thing is helpful to put it in context. I'll give you only two sets of numbers for comparison. The annual system income to public broadcasting, by which I mean the annual income of all of the public television stations and all of the public radio stations, added up together and throwing in the CPB appropriation, and all of the PBS money and all of the support that comes through the system, in the course of the year, comes to, in round numbers, 250 million dollars.

Public broadcasting today employs approximately 11,500 persons, 30 per cent of whom are part-time. It doesn't take much imagination to stack that up, just in gross impact terms, alongside American education. In the school year just ending, the estimated expenditures of American education are 110.4 billion dollars, 7.6 per cent of the gross national product. (The federal share of that, by the way, comes to just about 11 percent.) Education employs six million people, or 7.8 per cent of the civilian labor force.

Now, while it's probably true that communications media have impact that is out of proportion to the amount of money it takes to run them, with the number of people it takes to run them, nevertheless some sense of scale is necessary when you're talk-

ing about the relationship between public broadcasting, on the one hand, and education, on the other, as elements of society.

Let's discuss the common constituency of public broadcasting and higher education. In round numbers, 10 million persons are students in higher education today, broadly speaking. The current USOE projection suggests there will be 10.4 million students in higher education in 1977. About nine million of those will be in degree programs, according to the projections. Nontraditional study is growing very rapidly within that constituency. One of the leading elements of American education that is considered relatively nontraditional by American education standards—the junior or community college—is moving increasingly to the fore. There are more people now enrolled in community and junior colleges than there are in public universities. There are more people enrolled in community and junior colleges than there are enrolled in the other elements of higher education. So this is a big chunk of that overall higher education constituency that we're discussing.

One of the facts of life which public broadcasting and education mutually take into account is that education itself creates a market for education. In adult education, for instance, at the present time the largest group of students is in the 25-34 age bracket, with a high school education. Among those engaged in adult education, about 11 per cent have more than four years of college, and that seems to me to be kind of an impressive number all by itself. But when you qualify that 11 per cent figure with the fact that it represents something like 23 per cent of all of the people in the United States who have more than four years of college, it becomes even more impressive. Education creates a market for education: the higher the educational attainment goes, the greater the appetite for educational service.

It should be noted in passing that these characteristics—the student somewhat older than the stereotype and the increasing market for education based on educational attainment—apply both to adult education in the usual sense and to the normal constituency of public broadcasting. If we were to profile the public broadcasting audience—not especially for educational service, but for general audience programs—we would find the kind of person who fits the profile of the adult education constituency very neatly. So when I say we have a common constituency, I mean it in quite a literal sense, although I have not been able to trace out the statistics in detail.

This increase in the adult education constituency is true also as a statistical matter in the population as a whole. We have heard a good bit in

recent years, for instance, about having attained approximately ZPG (Zero Population Growth) in the United States, and we are all aware of the fact that school populations are beginning to fall off. Nevertheless, education for adults remains a "growth industry." Here are some figures supporting that view. The school-age population, those persons from 5-21, now includes 66 million people in the United States. A drop to 63 million is projected for 1980. By 1985, it will drop off further, to about 61 million vs. today's 66 million. The population between ages 21 and 64, on the other hand, is going up. This year, in the United States, there are 109 million citizens between the ages of 21 and 64. In 1980, it's expected there will be 118 million of us—up nine million; and in 1985, there will be 128 million of us, up another 10 million. So, one curve is going down, and the other curve is distinctly going up. And if you want to look at it in straightforward marketing terms, your adult education market is expanding.

Similarly, the educational achievement-attainment level of the citizen is increasing.

During a period of 14 years, from 1960 to 1974, the proportion of adults 25 years of age and older with high school education rose from 40 per cent to 60 per cent. In those same years, the proportion of persons 25 to 29 years old—that immediate post-graduate level, just-out-of-college kind of age span—the proportion of people in that age group who, in fact, had four years of college rose from 11 per cent to something over 20 per cent.

So there is quite a steep incline in that whole area of the society. The natural constituency of post-secondary, nontraditional study, and of public broadcasting, clearly represents substantial potential growth.

At the same time, students within this growing area are increasingly accustomed to the whole notion of using media. It is generally believed that the high schools, for instance, make rather little use of media, and that students prefer not to use media for learning. It is true that high schools make rather little use of media, but the National Center for Educational Statistics includes some interesting material in that regard in its profile of the high school class of 1972. The high school class of 1972 was asked how many respondents used television in high school during their high school career. Only 6 percent reported the use of television fairly often or frequently. Then, in another part of the study, they were asked a series of questions about their high school experience, what their high school should have done or shouldn't have done, and one of the agree-or-disagree statements was to the effect that the school should have used more television. Forty-six per cent said yes, they should have used more television.

Don't draw any long-range conclusions from that one little item, but I thought it was an interesting piece of information in that, among the students surveyed, the acceptance of media was well beyond its level of use.

What are some current difficulties or impediments to using public broadcasting and other kinds of instruments of nontraditional education that we're facing today? My own observation is that, in a strange way, the budget crunch through which education itself is going these days can adversely affect the kind of outreach effort which is often involved in post-secondary, nontraditional study. A situation in my home state of California is an example. The community colleges in California must admit all comers—it's an open system. Because of the current budget crunch in the state, it appears that the community colleges next year may only be reimbursed for 5 per cent more ADA than they had this year. That's below the normal growth pattern of a lot of those colleges. Therefore, you simply get yourself into a situation where you want to encourage new enrollments—it's part of the mandate—but at the same time you find yourself with no way to recover the costs resulting from inviting all those people in, and that's true whether you invite them in by television, or invite them into your classroom, or invite them into Saturday sessions. The ADA base may end up with a lid with which it is very tough to deal, and I suspect that that situation is not unique to my home state.

A second element is that teachers once more may be concerned about being replaced by technology. This was an early fear which apparently was laid to rest a decade ago. But now teachers are concerned about some hard projections. Depending on which formula you choose, in 1975 there is an excess of somewhere between 126,000 and 241,000 teachers nationally. Supply exceeds the demand. And the expectation is that by 1982 the excess will be between 155,000 and 274,000.

I was talking not long ago with a school superintendent who reported that teachers in a district not far from him are refusing to take student teacher interns into their classrooms because there's no point, they say, in training your own competition. I found that kind of spooky. I'd never heard of anybody doing that before. However, it's a case which is not unique. Furthermore, some of this impulse on the part of teachers is not simply selfish or self-serving, but is based on the fact that, as a number of school districts get into a budget crunch, it's very attractive to hire junior people in place of those who are more expensive, albeit more experienced. There is a real protectionist feeling abroad in the land. It's one of the impediments with which we must deal in looking toward the uses, not only of public broadcasting, but of various kind

of techniques, technological or otherwise, in non-traditional study today.

This set of facts is made even more clear when you consider one more statistic, which is that in elementary-secondary education today, 70 per cent of expenditures are related to personnel. The salaries of classroom teachers alone are 51 per cent of all of the expenditures of American elementary-secondary education.

A couple of quick notes about prospects for the future. In spite of some of the difficulties to which I've just alluded, we are without question in a growth situation. We have too much mutual opportunity for service, too strong a mutual mandate to deal in this area, for education and broadcasting not to be closely related. This will be encouraged further through the development of cable, which has had its knocks during the last few years, but nevertheless has its potential undiminished. We will see an increasing amount of interaction between what is now called conventional public broadcasting and cable.

A second development, a continuing one, is that programs will, in fact, become more accessible than they have been in the past. Users will become less dependent upon broadcast schedules than heretofore, not only because of the advent of cable, but because of the video-cassette (which is increasingly ubiquitous in education already) and the eventual development of video-disc, which has the potential to make that process even simpler.

Another point I would like to mention has to do with satellite developments, specifically the Public Service Satellite Consortium and its implications. One of the things mentioned at another session of the convention was the development of technology which enables one to interact with the program itself. Even now, satellite developments make a lot of activities possible, for example aiding in the provision of health care in areas that otherwise simply would be unserved.

I'd like to comment, in connection with our scientific advances, on an observation made by Sir Walter Perry to the effect that all too often, particularly in the United States, he believes—and I think with some justice—that we tend to get carried away with the notion of hardware, and we tend not to pay enough attention to the requirements of the program, the software, which is all too often the hard part and, in every case, the most important part. However, if you don't have the hardware, you're not going to get very far with the rest of it. It's a lot easier to say that we spend too much time worrying about the hardware if, in fact, you're in an island the size of Great Britain, with the BBC interconnected since the 20's. We still have a lot of growing

up to do in the United States, and some very difficult problems which, unhappily, must be solved by hardware, without taking one bit away from the overwhelming requirements of programming. The programming is paramount, but the hardware makes it feasible.

As a final note concerning prospects of the future: I think we're beginning to see some of the long-run interaction between services offered by public broadcasting and services offered by educational institutions. The thing that comes the most quickly to mind is the *Ascent of Man* project. Some of the people who were responsible for it are in this room—Frank Bouwsma and Martin Chamberlain. That kind of thing is the harbinger for where we need to go, and we've learned a lot in this experience. *Classic Theatre* shows every promise of doing even better in terms of enrolling students. At latest count, the number of people enrolled in the *Ascent of Man* project is 25,000. That's a big student body. Now KECT in Los Angeles is co-producing with

the BBC a series with John Kenneth Galbraith on the industrial state. It will be out in 1977, and one of the things we're trying to do is to build on what we've learned in the past and put the instructional package into the original project. If we're successful the costs will be easier to handle, the package will be more easily deliverable, and the student body can be even broader as time goes on.

In conclusion, it is important for people who are involved in education to remember every day, when they're trying to deal with public broadcasting, that American public broadcasting is the most decentralized broadcasting system in the world. It's hard to cope with so diverse a system, but the potential is worth it. Public broadcasting and post-secondary, nontraditional study share a natural constituency. Both are demonstrably committed to serve that constituency and both, while young, have a constructive track record in serving that constituency. The two should make a great long-distance team.



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Cable Television and Open Learning

**Lloyd N. Morrisett
John and Mary R. Markle Foundation**

I would like to address myself to three main questions: First, what is the present state of cable television in the United States? Second, what is likely to happen to cable television in the next five to ten years? And third, what are the present and possible future relations between cable television and open learning?

Regarding the present state of cable television, reports of its death are considerably exaggerated. Five years ago, however, cable television was seen very broadly as a panacea for the communications ills that seemed to be besetting the United States, and, in particular, the communications ills that seemed to be besetting broadcasting. It was seen as the potential carrier of a vast new array of services ranging from a greater variety of entertainment forms to the carriage of police and fire protection. These things have failed to materialize. At least they have failed to materialize in anything like

the time span that was being popularly talked about five years ago. As a result of this failure, and as a result of the recession in which we have been involved for the last two years, many people thought that cable television might have already run its course. They viewed it as a fad that was fading away. I believe they are wrong, and I think that you will see, as I continue, that there are some optimistic signs for the future of cable that have important implications for open learning.

First, let me very briefly review the driving forces behind cable television and why we are where we are now with respect to cable television.

Cable television began as community antenna television in areas where television reception was difficult or impossible. Despite the practically universal spread of television in the United States, there are still numerous small areas, particularly in mountainous regions or in isolated rural places, that either have poor television reception, or no television reception at all. In order to overcome this condition, people began to erect large antennas and connect them by a coaxial cable to multiple homes, in return for payment of a fee. And so, community antenna television was born. Its improved reception in places where television reception was otherwise difficult or impossible has been the main driving force behind the cable industry to this point.

A second driving force has been the opportunity to receive additional television programs. For example, in Canada, where much of the population lives along the border with the United States, it was found that cable television was very popular because it provided the Canadian viewer not only with his own stations, but also with a choice of United States stations. Similarly, in San Diego, cable television proved popular with a system growing to some 40 to 60 thousand subscribers because of the availability of Los Angeles stations in addition to the full network coverage already offered in San Diego.

So, the two driving forces were improved reception and additional choice. But the present state of the cable industry is characterized essentially by the way it first began - improved reception. As a result, there are numerous small systems with low channel capacity and little financial resource. At a second level, there are fewer large systems with 5,000 or more subscribers, offering more channel capacity and more choice. And there are still fewer cable television systems that have financial viability and resources of their own. Growth in urban areas is the rock on which cable television has stumbled so far, and what has damaged its image as the panacea envisioned five years ago. At the heart of the problem are the cities which, with some exceptions, are largely untouched by cable

television. The cities have been untouched primarily because television reception in many of them - Chicago and Philadelphia for example - is good to excellent and there are many choices available. People who believe in the future of cable television, and its growth as an industry, also believe that until a great many more cities than are now cabled become cabled, the cable television industry will be relegated to a relatively minor role on the broadcasting scene.

Despite this lack of coverage in the major urban areas, cable television in 1974 connects about 12½ per cent of all television homes in the United States. That is based on a total number of television homes between 60 and 65 million. The increase in the number of homes subscribing to cable television was about 20 per cent between 1970 and 1974. Revenues increased from 350 million in 1969-70 to some 500 million in 1974. So the picture is that the great promise did not materialize, and cable television now is much as it was five years ago, except that it has had a rather steady growth rate. Based on that appraisal, the picture that is being painted broadly for the cable television industry is that there will continue to be gradual incremental growth so that in another five or ten-year period, perhaps 40 per cent of American homes rather than the present 12½ per cent will be connected by cable television. This picture is the one with which we are familiar. It seems to be what's happening. It's not necessarily true as a vision of the future.

Let's explore the possible future for cable television as an industry, and from that go to the implications for open learning. There are several factors which, while not very important at present, I think are quite likely to be important within the next five years. The first of these factors is pay television, which during the last two years has become the largest single growth element in the cable television industry. It has been found that people are willing to pay an additional fee on top of their subscription fee for the basic cable service, to attain access to some first-run movies and sports events - the usual pay television package. In fact, people are so willing to do this that now, particularly in the urban areas that are beginning to be cabled, the pay feature is a feature that sells the cable. That is, if you want to subscribe to the pay feature, you also have to take the basic service. This is proving to be quite an effective sales feature in such places as Manhattan. In the National Cable Television Association, pay cable is seen as the most effective publicizer and sales element in the cable television picture right at this point. This has had a rather dramatic impact on the industry, not in terms of numbers, but rather in terms of its potential appeal in the previously resistant big city markets. In 1973, there were only 15 cities or 15 systems that

were equipped for pay television. One year later there were 60 cities so equipped, and this rate of growth seems to be continuing. If pay television proves to be as effective a sales device as people are currently believing it to be, then we can anticipate that the growth rate of cable, that has been an average 10 to 15 per cent per year compounded, may well accelerate at least in the initial enthusiasm for the pay service.

Direct advertising revenue is now of no practical importance whatsoever, but in the next five years it may become important as another bit of fuel for the expansion of cable. In 1973, advertising revenue in the cable television industry was minuscule—3½ million dollars—compared to the billions of dollars of broadcast advertising revenue. However, as cable television expands, at some point, perhaps when it reaches 20-25 per cent of homes, local and national advertisers will begin to consider cable as an alternative to the print and broadcasting sources of advertising they now utilize. When advertising revenues begin to flow into cable television more directly, there will be increased resources for cable-originated programming. Then you can expect the additional revenue to provide additional acceleration to the growth of cable. How the advertising dollar will be split under those circumstances, no one knows. But you can imagine that a local newspaper, which now draws most of the retail advertising in its community, may have some competition when a cable system connects many of the homes now served by the newspaper. It's not at all clear that a drawing in a newspaper will sell women's apparel any better than a model on cable television. In fact, many people would expect the reverse to be true.

A third factor which could prove an accelerator of growth in cable is two-way cable service. This, at present, is only in experimental form, and when it may become a significant element is anybody's guess. My own guess is 10-15 years. Nonetheless, when two-way service becomes widely available over cable systems and homes can directly relate to the program source, whole new classes of television programming become possible. And cable television, at that point becomes not simply a repeater of what is available over the broadcast system, but the carrier of a whole new class of service. It is difficult for us to imagine, but I believe it will bring with it many new possibilities for programming, entertainment, sports, and education. When the home is able to interact with the originator of the program, what the home does can be expected to make changes in the program as it occurs.

Any of the factors I have mentioned—pay cable, advertising revenues, and therefore increased origination over cable, or two-way service—can, at

some point, lead to an explosive growth in consumer demand for this service. If the consumer demand is there, the other factors that seem to be holding back the growth of cable will all diminish and fade away.

I believe that cable television and open learning programs could have something to offer each other. Home Box Office television, a pay cable service, provides some support for that theory. Home Box Office has been distributing, among other things, two educational programs on its leased channel on a trial basis: "The Artist at Work," 15 half-hours from the University of Michigan, and "Consumer Experience," 30 half-hours from the University of Wisconsin.

The people at Home Box Office have been quite surprised by the ratings received by these two shows. "The Artist at Work" has received a weekly cumulative rating of 14 per cent (that is, 14 per cent of the Home Box Office subscribers say that they watched the program sometime during the week. Seven per cent of the audience say that they watch it every day.) "Consumer Experience" has a weekly cumulative rating of 30 per cent—a regular daily rating of 12-15 per cent. Prior to testing, it did not seem possible that programming apart from the entertainment and sports package normally provided would have much audience appeal.

Looking ahead, the Home Box Office people are very encouraged by these results and believe that educational and cultural programming may have an important place in their future service. Their one complaint is that no one is coming to them with anything additional to offer over the cable and they don't have enough product. That's their concern at present.

Now let's turn to cable television and open learning. Based on the kind of picture that I have drawn of the cable television industry so far, let us examine the question, "What does cable television, with the present structure of the industry and the present coverage, have to offer learning?" First, it offers excess channel capacity. Most newer cable systems, which most likely have a capacity of 12 to 24 channels, are not able to utilize all of their channels; therefore, they are very desirous of having additional programming alternatives to fill up some of the channel space that now goes unused. Any additional programming alternatives potentially offer the cable operator the chance to sign up new subscribers and therefore make more of a profit. Thus, he is interested in filling up that channel capacity. He will do so even if he has to put on printed cards with announcements and news. That's better than nothing. The worst thing for a television operator is to have a blank or down channel.

Second, cable television offers open learning a chance for low-cost experimentation. Where there is excess channel capacity, the cable television operator will accept experimental, low-cost programming that in cases of channel competition he might not accept. At present, in many places where there are newer, larger cable systems, there is a chance for this low-cost experimentation that there probably won't be when there is more demand for the channels. Third, the cable television operator offers a road into the home of the person interested in open learning.

There are, however, some disadvantages. First, what cable television does not offer open learning at present is financial support. The cable television industry, as I indicated previously, is not a large industry. Many of the systems are operating at no profit, or at a loss. Very few of the systems are putting any significant amount of money into local origination, and the person or university or institution interested in open learning cannot expect, with very few exceptions, any significant financial support from the cable television operator.

Second, the cable television firms will not usually be able to offer programming expertise. The cable television business, at present, is a service industry. It is the business of signing up subscribers, hooking up the homes, servicing the facility, collecting the bills, being sure the equipment is in operation. It is not a production business. It is not a programming business. Therefore, if you are interested in open learning, you would have to think of providing the expertise yourself.

Third, cable television does not offer wide and uniform availability of its service. Depending upon the area served, unless you are talking about the small towns that don't have any television service otherwise, cable television can be expected to be serving from 25 to 60 per cent of the television homes. You don't get into every home. You get into only those that are cabled, and those will not be uniformly distributed by geography, by income, or by anything else. They may be distributed simply by the way the cable television operator has built his system.

Turning the question around, what does open learning offer cable television? As indicated earlier, it offers additional programming which at present, given excess channel capacity, is highly desirable. It also offers the cable television manager a chance to fulfill his public service responsibilities. The newer regulations of the Federal Communications Commission provide that one channel must be available in new systems for educational use. The FCC favors public service activities by broadcasters and cable television operators, so open learning is a way for the cable television operator to fulfill this

public service responsibility. Also, in the same way that it offers the chance for experimentation to the open learner, it offers the chance for the cable television operator to experiment. He can experiment with new kinds of services that he might not otherwise have and find out whether these new services offer opportunities to make additional money.

What open learning does not offer cable television, first of all, is many additional viewers. Except for a very few cases, the kind of educational material that is presented over cable television will not draw many viewers. It will not draw many viewers because it is in direct competition with what the viewers mostly want...entertainment and sports. So, the cable television operator will not find many additional viewers. Second, at present, again with exceptions, open learning does not offer the cable television operator high quality programming. Because of the cost problems faced by everyone in the television production business, it's typically a low-budget item for the university or the institution producing the material, and typically is not the kind of production material that comes out of New York or Hollywood. Third, for the most part, and again with exceptions, open learning does not at present offer cable television programming with broad interests. That is, it does not appeal to a broad segment of the television audience.

Given these features of the industry and the features of open learning as I see it at the present, I would like to briefly list for you some requirements that I think would best be met if an institution decided that it wanted to make a marriage between its interest in open learning and cable television. The requirements need not all be met for the experiment to be a success, but the more of them that are met, the more likely the experiment is to be a success.

First, I would want my institution to be in a good cable market with a strong cable system. If your cable system has a low rate of penetration, is financially in difficulty, doesn't have many subscribers, doesn't show a high rate of growth, then I would be very reluctant to become involved with it if I were a university administrator looking at this as a potential medium for distributing open learning...

Second, I would want my institution to have a pre-existing emphasis on television-related skills within the institution. At best, I would want to have a department that was interested in training television technicians, television producers, people who were interested in using this technology so that I didn't have to manufacture this interest in my institution or import people to do it.

Third and optimally, I would want my institution to have strong programs in music, drama, and sports so that I would have some programming in

addition to the normal academically-oriented programming that might appeal to viewers—might attract them to the kind of thing that I was trying to offer. This would be very good publicity both for the cable system and for the institution.

Fourth, I would want my institution to have a philosophical and financial commitment to reaching beyond its normal student body.

Fifth, I would want my institution already to be committed to nontraditional forms of study. Cable television, at present, given the low rates of penetration in the industry, is likely to be seen as somewhat of a frill on the part of many people interested in open learning so that if your institution didn't already have this commitment, to generate the commitment on the basis of cable television might well be difficult.

Finally, I would want my institution to have proven administrative flexibility, the kind of flexibility that will make it possible, if you get into the situation of trying to produce open learning over cable television, to put the best of the institution to work in the effort.

I think cable television is an interesting possibility for open learning: not a highly significant one at present, perhaps, but likely to grow in significance. What might be the effects of successful, national networking of cable systems and pay television? If the Home Box Office kind of experiment is financially successful, it is certain that networking of cable systems will become much more widespread. Cable television will, to some extent, cease to be the local phenomena that it now is, and will become a national phenomena. Given excess channel capacity, there is no reason why a national network cannot provide essentially the same open learning experience over a network of cable systems. Under those conditions, it is not at all clear to me that the competitive situation that is thereby created will be very conducive to many individual institutions participating in this industry. The reason is that television production costs are high, and to get television viewers you have to

have as good quality production as you possibly can in order to compete for viewers—to compete with *I Love Lucy*, or *All in the Family*, or whatever the case may be. So, if national networking of cable systems becomes a reality, I would anticipate that there will be a gradual move toward greater cooperation and greater concentration of financial resources to produce whatever open learning material is eventually distributed. The way that the cooperation might work out between nationally-distributed material and locally-produced material is unclear at present.

A further word about the relation between program costs, quality, and viewer interest. In situations where the viewer is watching your program because it is an instrumental part of his life and he has to have what you are providing in order to get a degree, in order to go ahead in his vocation, or because he has paid a substantial sum in order to have that opportunity, he will take practically any quality programming. If the viewer has to have the material, the quality of programming becomes very much less important, so in those cases where you are dealing with people who have this pre-existing commitment to use what is on the air, I think that local programming and low-cost programming can be quite successful.

On the other hand, when you switch to the other extreme and attempt to provide academic material to viewers to whom the material does not have direct instrumental value, the problem of enticing the viewer is very different. For example, it would be interesting to learn more American history at the time of the Bicentennial, or it would be nice to learn something about modern mathematics because the children are taking it in school. In this case, when you are trying to enlist an audience that is not already committed to utilize the material you are presenting, my guess is the quality of programming will have to be high in order to compete successfully. And quality is more likely to come from national programming than from local programming, since it will require a greater concentration of talent and financial capability.



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Satellite Broadcasting: Capabilities for Public Service

Richard B. Marsten
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Satellite broadcast services to support health-care and educational transmissions must work with small, low-cost terminals in allocated radio-frequency bands.

The ATS-6 spacecraft has successfully demonstrated such capability in the hands of non-technical users. It supports interactive television broadcasting to simple, low-cost terminals in a nationwide series of experiments in the delivery of health-care and educational services. ATS-6 achieves this capability with a very large antenna and moderate transmitter power. The coverage limitations inherent in this approach will be overcome by the joint U.S.-Canadian Communications Technology Satellite to be launched in December of 1975. The CTS will demonstrate broadcast capability with new, high-power technology in a newly-allocated radio-frequency band. This will make it possible to use smaller antennas, greatly enlarging the area

coverage available to the many non-technical experimenters using CTS for their own needs. A practical application of these technologies is now in development for operational broadcasting services in Japan.

I. Introduction

In June of 1969 the National Aeronautics and Space Administration announced a policy making available to interested users the experimental capabilities of orbiting applications satellites whose program objectives had been achieved. The announcement focused initially on Applications Technology Satellites (ATS) -1 and -3, having capabilities for voice transmissions in the space research bands of the radio-frequency spectrum at Very High Frequencies (VHF) and for television and voice transmissions in the radio-frequency spectrum bands allocated to the commercial, fixed-satellite service. NASA would schedule time on the satellites and operate them for the benefit of users whose proposals for experimental applications of the satellite technology were found acceptable.

The policy has been extended to other spacecraft launched since June of 1969: ATS-5, ATS-6, and the joint U.S.-Canadian Communications Technology Satellite to be launched about December, 1975. The communications capabilities of all these spacecraft are available to interested users, and the policy has been broadened to bring users into the programmed planning of experiments while the spacecraft are still undergoing development, integration, and testing prior to launch. This broadening of policy and practice accommodates the rapidly expanding interest of non-technological users in satellite broadcasting applications experiments—an interest that continues to grow because of successes with user experiments in health-care and educational applications based on the greatly enhanced capabilities made possible by ATS-6 and CTS.

This paper will explore these capabilities for non-technological users.

II. Some Fundamental Considerations

The radio-frequency spectrum is allocated world-wide on a use-for-service basis. The United States is a member of the allocating body, the International Telecommunications Union of the United Nations, observing the agreed-upon regulations and technical standards within as well as outside its own borders.

Within the United States, the Federal Communications Commission is responsible for frequency regulation. Its assignment of frequency allocations for different services reflect those of the I.T.U., in

particular with respect to satellite communication systems. Certain assignments, available for experimentation and research purposes only, may not be used for delivery of regular services. Among these are the space research bands at VHF (135, 146, and 149 MHz), used in ATS-1 and -3 for command, control, telemetry, and communications experiments. ATS-1 and -3 also operate in the band allocated to and currently heavily used for commercial satellite communication: 6 GHz for earth-to-space, and 4 GHz for space-to-earth.

Three bands of current interest have been allocated for satellite broadcasting services: 620-790 MHz, in the UHF portion of the conventional television broadcasting band; 2500-2690 MHz (2.50-2.69 GHz), in the Instructional Television Fixed Service band; and 11.7-12.2 GHz. Figure 1 shows conditions under which these bands may actually be used for satellite broadcasting. In the UHF and ITFS bands, the power (or flux) density allowed at the earth receiving antenna is limited in an attempt to prevent harmful interference to existing terrestrial services from satellite transmissions. This tends to place a lower limit on the size and complexity of earth receiving stations required for a specific signal quality, although it does not appear prohibitive for direct use of the received signals. A potential, longer-term limitation in these bands might be the available bandwidth: 170 MHz at UHF and 190 in the ITFS band, compared with 500 MHz in the 12-GHz band. The channel capacity available at 12 GHz is thus proportionately greater. Additionally, operation in the latter band is not power-limited. Finally, the restrictions to regional and domestic operations in the ITFS and 12-GHz bands are not serious, since practical applications demonstrated and proposed in satellite broadcasting are virtually all domestic. Regional applications are by nature cooperative, like those in educational or health-care information interchange, and thus performance depend upon prior agreement of the administrations concerned.

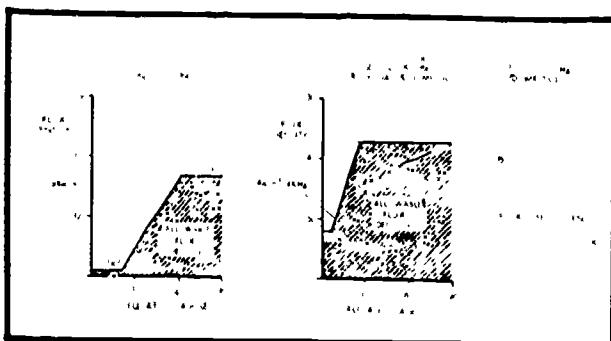


Figure 1. Broadcasting Satellite Service
(WARC Frequency Allocations)

The United States has completed, and India is about to begin, one-year experiments in satellite broadcasting at UHF (860 MHz, one-time only) and in the ITFS band. The United States and Canada will embark on a series of experiments, both domestic and cooperative, in satellite broadcasting in the 12-GHz band, in 1976.

Communications Coverage from Orbit

Conventional practice places communication satellites in a particular orbit, one in which a satellite will circle the earth once every 24 hours. Orbit of 36,000 km. (22,300 miles) altitude have this property. If the orbit is in the equatorial plane, the satellite will have no north-south motion; if it is inclined, the north-south motion will describe a figure eight every 24 hours on the earth's surface whose extremes are equal to the inclination. Synchronous with the earth at 36,000 km., a satellite in equatorial orbit will thus appear stationary to observers on the surface. In this condition the coverage available from its antennas can also be made to appear stationary on the earth's surface. Demonstration of the practicality of the synchronous, geostationary orbit was central to the establishment of practical, economically attractive satellite communication systems. Commercial communication satellites, the ATS series, and the CTS all use the geostationary orbit.

ATS-1 and -3 each have the capability to support transmission of a television channel at 6 and 14 GHz between earth stations having antennas of 10-meter or greater diameter or to support transmission of a single voice channel between small earth stations in the space research bands at VHF. Their antennas are designed to provide coverage over very large areas (Figure 2), thus allowing the transmitted power to be widely spread.

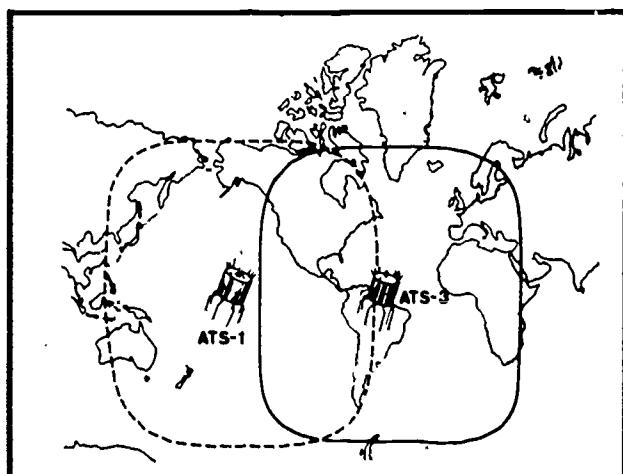


Figure 2. Earth Coverage Regions for
ATS-1 and -3

The coverage provided by an antenna is inversely related to its size: the larger the antenna, the narrower its beam. The antenna may be thought of as concentrating its radiated beam somewhat like a flashlight reflector behind its bulb. The narrower the beam, the greater is the transmitted intensity of power into the area of coverage. This ability to focus the beam and increase the radiated intensity, or power (flux) density into the coverage area, is called "antenna gain". It is proportional to the area of the antenna and inversely proportional to the square of the radio frequency being used. Thus, for a fixed antenna size, higher frequencies are associated with higher gains. As gain (or antenna size) increases, the size of the coverage area decreases. The coverage area of a communication satellite is determined by choosing the size of its antenna.

Communications Performance and Earth Station Size

Similar considerations apply to reception. The size of the receiving antenna determines its ability to collect power. If the satellite antenna is relatively small, as in ATS-1 and -3 and in the commercial communication satellites, and the transmitted power is spread relatively thinly in a wide beam, a relatively large earth-station antenna should be used to collect power adequate for the desired signal quality. Quantitatively, the received signal power is proportional to the product of transmitted power with transmitting and receiving antenna gains. This tells us that a signal received for a given coverage area can be made adequate in strength for a specified signal quality by choosing any or all values for these quantities appropriately.

Since the transmitter power is modest (6-10 watts) and the satellite antennas are relatively small, earth stations with large antennas (10-meter or greater diameter) are used in the commercial communication satellite service to achieve satisfactory communication performance. (The cost of a receive-only earth station working in the 4-GHz band and having television-channel capability for distribution or rebroadcast is over \$125,000.) In systems having few ground stations and handling relatively large blocks of traffic among them, this is a desirable state of affairs. Using few, large, complex earth stations as distribution points, it leads to economically attractive characteristics for commercial systems.

In systems intended to serve very many individual users directly, as in health-care or educational broadcasting, a proliferation of earth stations may be expected. Here the earth stations should be simple, small, and easily operated. In such systems it seems desirable to place relatively high power

and antenna gain in the satellite to permit small, low-cost earth stations to provide the signal quality desired directly to the user groups without extensive switching and redistribution. ATS-6 and CTS embody different approaches to this situation, both of which will be treated later on.

The nature of the signal is important to establishing the signal quality desired. A single tone can be characterized by a frequency of vibration in cycles per second or Hertz (Hz), and an amplitude or signal strength. The voice covers a range of frequencies from about 100 to a few thousand Hz. To transmit voice signals reasonably faithfully the practice is to use a band of frequencies, about 4000 Hz in width, that is processed, or modulated, so that the modulated product rides on the frequency of transmission, the carrier. A television signal contains much more information than does the voice, and occupies a bandwidth of about 4.2 million Hz, or MegaHz (MHz) at the television receiving set.

Electronic devices have inherent noise-generating characteristics caused by the random motion of their electrons. The noise power in a device, a property of its materials and design, will be proportional to the bandwidth of the signal it must process. In radio-frequency receivers, and especially those sensitive enough to be used for satellite communications, the noise power becomes a design factor. Since it is proportional to bandwidth, one can consider a ratio of noise-free signal power to

voice power as a measure of signal quality and, in effect, deduce that the signal quality then could be determined by dividing the product of transmitter power and antenna gains described earlier by the total noise power of the signal.

In the United States the standard signal for television transmission uses a form of amplitude modulation. Voice broadcasting is done in both amplitude- and frequency-modulated forms. Frequency modulation tends to be freer of noise than amplitude modulation, but to achieve this noise immunity it uses much more bandwidth. In satellite communication, the trading of power and bandwidth to achieve technically sound and economically practical systems clearly favors the use of frequency modulation. Since television receiving sets are manufactured to accept the standard signal, this means that a practical, economical satellite broadcasting system would function on FM and have its earth-station receivers designed to convert the signal to the standard form compatible with ordinary TV sets. Experiments on ATS-6 and CTS are designed accordingly.

III. ATS-6 and Satellite Broadcasting in the ITFS Band

ATS-6, launched May 30, 1974, is the most powerful, versatile, and complex communication satellite in orbit today. It is a multi-purpose, multi-user spacecraft intended to demonstrate seven major applications:

- Broad-area coverage to reach many small, low-cost ground stations;
- Accurate position-location of, and communication with, aircraft and ships;
- Instructional, educational, and health-care broadcasting by satellite;
- Technical characteristics of new space communication bands in the radio-frequency spectrum;
- Various new satellite technologies, including precision pointing and attitude control;
- Dual-wavelength meteorological observations from an inertially-stabilized, geostationary platform;
- Science experiments in the geosynchronous environment.

To accomplish these demonstrations, ATS-6 carries 23 different experiments. Because their objectives are so varied the spacecraft was not optimized for any one use; rather, it was designed to achieve the best experimental results possible over the entire variety of different experiments for different uses. The spacecraft, shown in Figure 3, uses



Figure 3. ATS-6, Deployed for Systems Tests

a 10-meter (about 30 feet) diameter antenna and a beam-pointing system of better than 0.1° precision as the basis for its many communications experiments. In the ITFS band, these items are combined with two transmitting beams, each about 15 watts in power, to provide broadcasting capability for experiments in Alaska, the Rocky Mountain States, and the Appalachian Region. The satellite attitude control system allows it to point to any desired region within its view with an actual precision of 0.03 degree. Coverage provided to each of the regions is shown in Figure 4 for the Health/Education Telecommunications (HET) experiments.

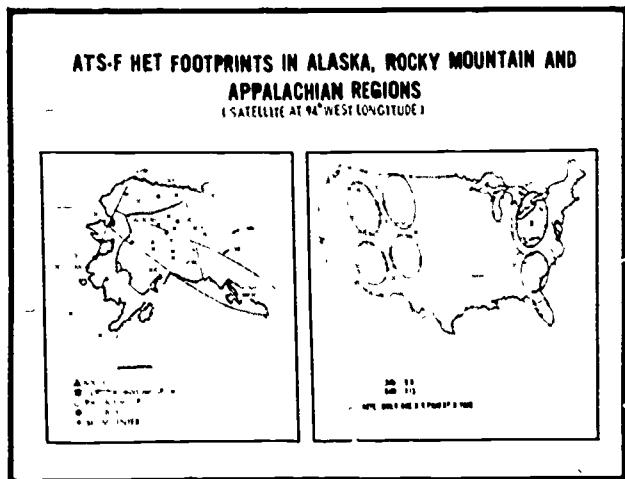


Figure 4. Coverage Regions for ATS-6 HET Experiments

Beam spot sizes in the Rocky Mountain and Appalachian regions average 360 miles east-west by 500 miles north-south, considerably greater in area than the coverage of about 50 miles' radius available from a terrestrial broadcasting station. The coverage provided to Alaska is limited by the earth's curvature as well as by the spacecraft design; it is shown for the upper beam. The lower beam provides coverage for the Northwest Region, particularly Washington.

With the 10-meter antenna and 15 watts power per beam, ATS-6 works into ground stations of the type shown in Figures 5 and 6. The antenna is about three meters (10 feet) in diameter; the feed contains a preamplifier unit to provide an amplified signal to the indoor unit of Figure 6.

Beamwidths are sufficiently large to permit the ground antenna to be pointed toward the spacecraft and fixed into position. And the entire station is designed so that a simple on-off switch is all that is needed to operate it. A pilot light gives power-on indication, and a signal-strength meter gives indication of satisfactory antenna orientation and station performance. The station can receive either of the two channels available from the spacecraft. Connected for the HET experiment, it provides a

standard signal to a conventional TV set (Figure 7). Emplaced and operating, each station cost \$3,700 (1973 dollars) in a lot quantity of 130.



Figure 5. HET Ground Station Outdoor Unit

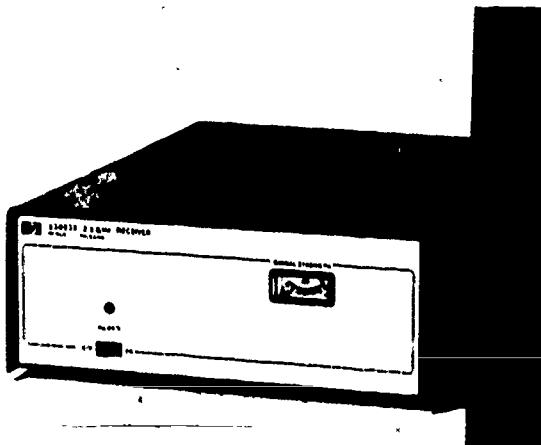


Figure 6. HET Ground Station Indoor Unit

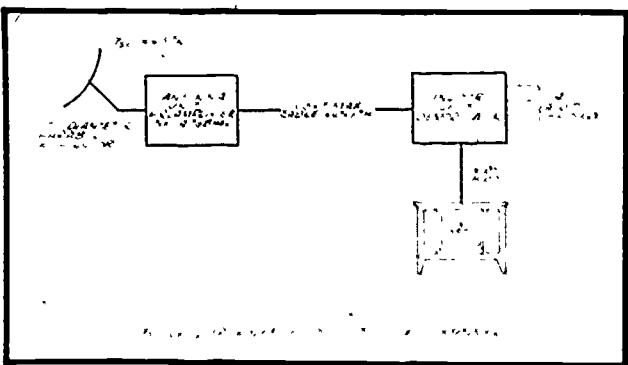


Figure 7. HET Broadcast Performance

SUMMARY OF SYSTEM PERFORMANCE		
	CALCULATED	MEASURED
<u>S-107 UP-LINK</u>		
EFFECTIVE EARTHSTATION TRANSMITTER POWER	+1.0 dBW	+0 dBW
FORMING ERROR	1.0	
PATH LOSS (TO SMOOTHNESS POINT)	199.02 dB	
ADDITIONAL PATH LOSS (ELEVATION ANGLE = 22.1/2°)	42 dB	
G/T AXIS LOSS	1.5 dB	
ATMOSPHERIC FADING OF NOISE	-17.0 dB/10°	
BOLTMANN'S CONSTANT	-226.6 dBW/KHz	
RECEIVED CARRIER TO NOISE POWER DENSITY (C/N)	23.6 dB-Hz	
RECEIVED SNR LEVEL	70.0 dB	+70 dBm
<u>S-107 AND DOWN-LINK</u>		
LINK PEAK	SLA	
PATH LOSS	199.0 dBW	
ADDITIONAL PATH LOSS (22.1/2°)	1.26 dB	
G/T AXES	4.51 dB	
POINTING ERROR (+/- 2°)	1.0 dB	
FORMING FUDGE OF NOISE (G/T)	1.5 dB	
BOLTMANN'S CONSTANT	-226.6 dBW/KHz	
RECEIVED CARRIER TO NOISE POWER DENSITY (C/N)	FP 42 dB-Hz	
TOTAL CARRIER TO NOISE POWER DENSITY (C/N)	87.3 dB-Hz	
PANWIDTH (1.3 MHz)	73.6 dB	
TOTAL CARRIER-TO-NOISE RATIO (S/N)	13.7 dB	
MARGIN ABOVE 10.5 dB THRESHOLD	3.4	
FS (1.3 MHz)	43.7 dB	49.0 dB
WEIGHTED SNR NOISE		

Figure 8. HET Broadcast Performance

Figure 8 shows the calculated and measured performance of the HET experiment broadcasting link. A signal-to-noise ratio of 49 dB has been shown, in a widely accepted statistical test sequence whose results have for many years been taken as a standard, to be considered "fine" to "excellent" by over 98 per cent of all viewers.² This quality is as good as or better than that found on TV studio monitors, and about 20 times better than that found on well-tuned home receivers. System performance of this quality was designed to assure that the HET applications experiments would not be limited by signal quality.

When the Department of Health, Education, and Welfare and the Corporation for Public Broadcasting proposed the HET experiment series to NASA in 1971, the change envisioned to the spacecraft to support them included both multiple audio tracks with the video broadcasting and provision for interactive audio. Figure 9 shows the broadcast signal format, with four rather than the conventional one audio channels associated with the video. This capability is included in the earth stations and is compatible with the spacecraft. It is in use in Alaska and can be used wherever other languages besides English are used by the target populations. As many as four languages at a time can be broadcast on a single composite channel, and the experimenters can select the appropriate audio channel to couple with the video for their particular purposes, in time and place. Additional

audio channels may, alternatively, be used to transmit supplementary data along with voice and video. (This is, of course, prearranged in the experiment procedures.) Such flexibility may be useful also in operational systems. In India, the principal experiment at 860 MHz has two audio tracks, and their operational plans include a comparable flexibility to cope with their 16 major, native languages.

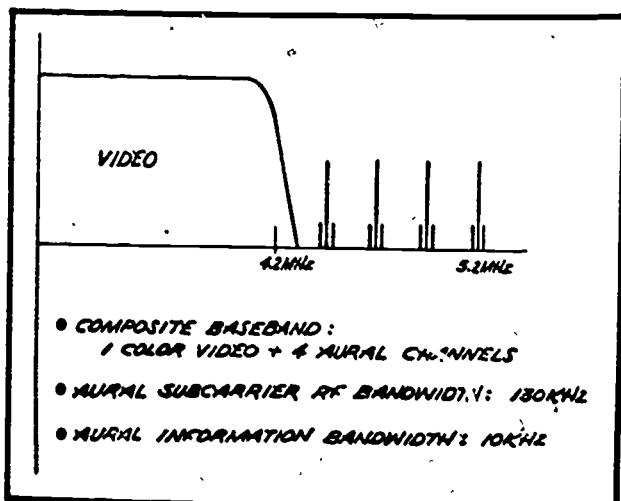


Figure 9. HET Broadcast Signal Format

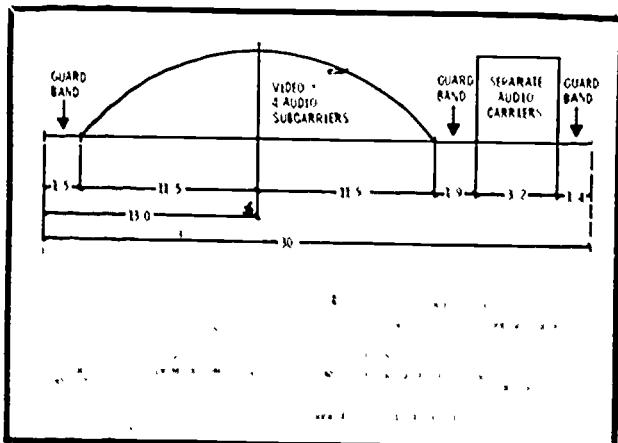


Figure 10. Radio-Frequency Spectrum of Composite Signal.(MHz)

Figure 10 shows the original plan to provide for interactive capability in the satellite. Here, the frequency plan is translated to the radio-frequency band. The rectangular block labeled "Separate Audio Carriers" shows a portion of the ITFS band that was to have been used for interactive voice, data, facsimile, and slow-scan transmissions. Technically, such a capability presents no serious problems, but for other reasons it was not possible to include it. The HET experiments with ATS-6 use

the voice-channel capabilities of ATS-1 and -3 at VHF for interactive communication.

ATS-6, with interactive support from -1 and -3, has successfully demonstrated a highly reliable satellite broadcasting capability of very high signal quality into simple, small, low-cost terminals. Successful experiments in graduate education, medical education and tele-conferencing, remote medical diagnosis and treatment, and junior high school education have been performed with it by DHEW and their experimenters. The potential for operational services demonstrated by these experiments has led to a broad-based, public action to form an organization dedicated to providing such services, the Public Service Satellite Consortium, incorporated in March of 1975.

ATS-6 is committed to support the Indian Government's Satellite Instructional Television Experiment (SITE) from August, 1975, through July, 1976. Its use for experiments in the United States was interrupted as scheduled at the end of its first year of operation to move it toward India. It is scheduled to return by September of 1976. During its absence, experimental capability will be provided by the Communications Technology Satellite (CTS) being developed jointly by the United States and Canada. CTS will be launched at the end of 1975.

IV. CTS and the 12-GHz Band

Figure 4 shows the area coverage available from ATS-6 to be relatively small. Satellite broadcasting services should be able to cover large areas and still work with small, low-cost ground stations. While ATS-6 achieves its broadcasting capability with a very large antenna, its transmitter power of 15 watts per channel is still quite moderate. Increasing the transmitter power substantially would permit an equivalent reduction in antenna gain while maintaining the necessary flux density at the earth stations, thereby increasing the coverage area.

CTS embodies this approach, but in the 12-GHz band. Since the capability of broadcasting to small, low-cost ground stations was already established in the ITFS band through ATS-6, and since the 12-GHz band was allocated to the satellite broadcasting service without flux density limitations (Figure 2), it was thought appropriate to demonstrate high-power, wide-area coverage with CTS in the latter band. The CTS will fly a new kind of satellite transmitter, having 200 watts power in a single channel and a major improvement in efficiency. With the gain needed at 12 GHz, the antenna is sized for a 2.5° beam rather than the 0.8° of ATS-6. From synchronous orbit, a 2.5° beam can cover one-third of the continental United States, or about a million

square miles. Figure 11 shows three typical coverage patterns available from CTS. The coverage limitation of the ATS-6 has been overcome.

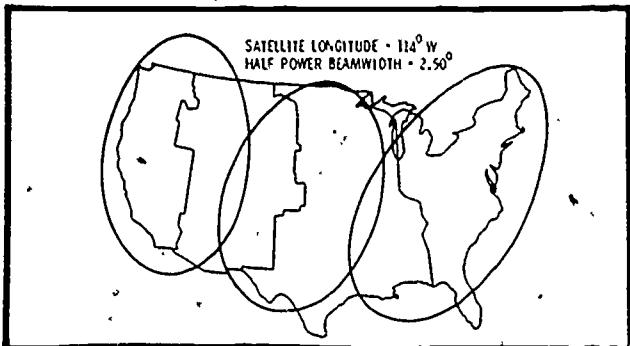


Figure 11. CTS Antenna Beam Footprints Over Continental U.S.

CTS, however, has been designed to meet a different set of constraints. Capabilities of available booster rockets limited the weight allowance for the spacecraft. Because of this, CTS has only a single broadcast channel (while ATS-6 has two), and additional weight limitations on the station-keeping require that it be launched into a slightly inclined orbit. Coupled with the higher gain (and consequent narrower beamwidth) of the 3-meter, earth-station antenna at 12 GHz, this requires a positioning drive with the CTS earth-station receiving an antenna. These experimental limitations, however, need not be characteristic of operational systems at 12 GHz, just as the experimental coverage and interactive-channel limitations of ATS-6 will not be characteristic of operational systems in the ITFS band.

The CTS capability is self-sufficient. Two independently controlled antennas on the spacecraft can be used to point, receive, and transmit coverage patterns wherever desired. For example, any of the patterns shown in Figure 11 could be used for reception, transmission, or both. The antenna can be pointed to move the coverage patterns in Canada also. Figure 12 shows some typical ex-

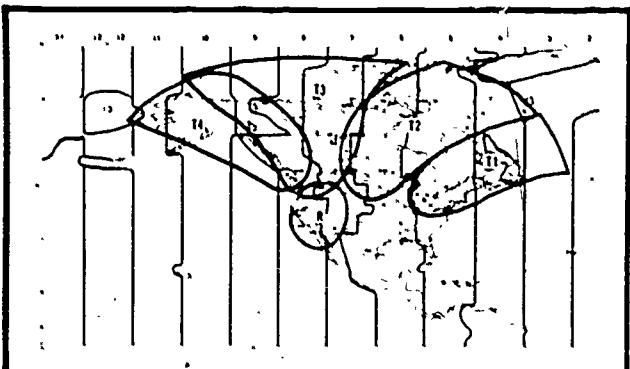


Figure 12. CTS Antenna Beam Footprints for Broadcasting Program From California Sequentially Across Canada

amples. Here, the receive pattern is centered on the NASA Ames Research Center at Moffet Field, California, while the transmit pattern could cover any of the areas shown as T-1 through T-4. The satellite also has its own capability for interactive audio.



Figure 13. Communications Technology Satellite (CTS)

Figure 13 is a drawing of the satellite. The unfurlable solar arrays, extended on either side of the satellite body, have a capability in excess of a kilowatt. Slightly under half of that is needed for the 200-watt, superefficient transmitter. The antennas can be seen on the earth-looking face of the body.

CTS DOWN-LINK CALCULATIONS	
EIRP	57.3 dBW
Pointing Error	-2.3
Path Loss	-10.6
Off-axis Loss	-3.0
OT (10 ft. dia. antenna, 1100°K)	16.7 dBPK
Received Carrier to Noise Power Density	90.2 dB
TOTAL MARGIN	4.4 dB
Calculated Peak to Peak Video Signal-to-Weighted rms noise	49.7 dB

Figure 14. CTS Broadcast Performance

System performance has been designed, as in ATS-6, for better than 49 dB signal-to-noise ratio (Figure 14). This includes a margin for losses in rain, a serious factor at frequencies over 10 GHz. The margin has been chosen to give reliable link performance 99.9 per cent of the time throughout the United States. It is based in part on the results of experimental data obtained from 1969-1974 at 10.3 GHz on ATS-5, in part on early results from experiments at 13 GHz on ATS-6, and in part on other data on radio-frequency propagation in the

12 GHz region. This performance will be achieved with ground stations like those in use with ATS-6: 3-meter diameter antennas, but with motor-controlled positioning drives somewhat similar to those used in conventional TV antenna rotators; outdoor and indoor electronics units. Because of the added complexity of technology in the newband at 12 GHz and because of the antenna drives, the small-quantity cost of these stations may be as high as \$12,000 (1975 dollars). If a 12-GHz operational service be established, these costs will very likely show an appreciable drop.

CTS will begin experiment operations in January, 1976. Its program calls for experiment activities through the two years of its design life. If experience in orbit is favorable, activities may continue beyond that time. With its large-area coverage and complete dedication to applications experiments in satellite broadcasting, it offers a very attractive opportunity for potential users of operational services to explore their applications in advance and build up their experience. The sharing of satellite time 50-50 between the United States and Canada provides each partner ample time to build up experience with satellite broadcasting. The initial United States program plan of 13 experiments (Figure 15) will explore new ground in health care and education, will open new experimental areas in community and special services, and will provide a test bed to support technical experiments in link performance and ground equipment technology. Some of the results are expected to contribute to resolving the question of which band to choose for initial operational services.

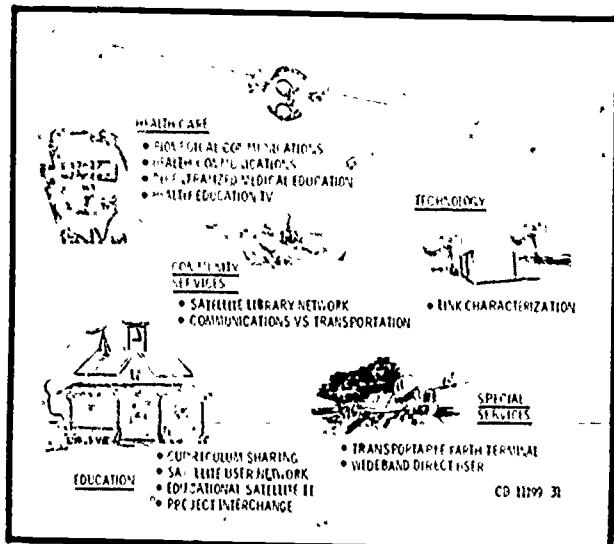


Figure 15. CTS User Experiments

V. The Japanese Broadcast Satellite (JBS)

In an effort to fulfill its obligation to provide television broadcasting coverage to all the Japanese population, the Japan Broadcasting Company (NHK) has contracted with General Electric for broadcasting satellites. The JBS system will have two television broadcast channels, each with one audiochannel, and will use high-power technology derived from that of CTS. Since the intent is to provide broadcasting of NHK programs, there is no interactive capability. The satellites have been design-optimized for the Japanese application and the same booster that is being used for CTS. NHK has chosen the 12-GHz band for its operations.

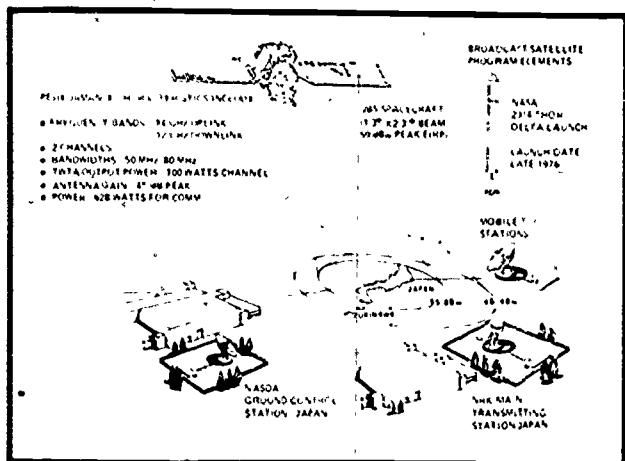


Figure 16.³ Japanese Broadcast Satellite

Figure 16 summarizes the system and shows a sketch of the satellite, with its single, fixed antenna. Figure 17 shows the antenna pattern, designed to maximize Japanese coverage with a minimum of radiation spillover into other nations. Figure 18 summarizes the satellite (system) characteristics with three-meter earth stations. The "TASCO GRADE 1" color TV channel designation corresponds to a signal-to-noise ratio of about 43 dB, still a very high quality picture for viewing, but not considered adequate for terrestrial rebroadcasting. Japan will be the first country on earth to have an operational, satellite broadcasting system.

• PROVIDES

- ON-AXIS PARAMETERS: 59 dBW PER CHANNEL, 41 dB ANT. GAIN,
- 2 TASCO GRADE 1 COLOR TV CHANNELS AT 14/12 GHz
- 1.6 METER, 600°K GROUND TERMINAL
- MAXIMUM POWER TO JAPAN AND POSSESSIONS, BUT MINIMIZE FLUX DENSITY ON CHINA AND KOREA - 9 dB BELOW EDGE OF MAIN ISLANDS
- IS THE HIGHEST POWERED 214 THOR-DELTA LAUNCHED SPACECRAFT PROVIDING:
 - 767 WATTS AT THE END OF 3 YEARS (725 WATTS AT END OF 7 YEARS)
 - NORTH/SOUTH STATIONKEEPING
- MAXIMIZES THE USE OF FLIGHT PROVEN COMPONENTS AND DESIGN TECHNIQUES
 - MOST COMPONENTS FLIGHT QUALIFIED, FLIGHT PROVEN
 - MISSION-UNIQUE COMPONENTS BASED ON EXISTING HARDWARE; MODIFIED FOR BSE MISSION

Figure 18.³ Japanese Broadcast Satel
Satellite Characteristics

VI. Questions and Conclusions

Because the technology of satellite broadcasting is available in two frequency bands, questions are being raised concerning which band is "better". With these technologies, it is not clear that either is. If the available bandwidth were the same in the ITFS and 12-GHz bands, the ITFS band would probably be favored because the cost is less to invade the lower frequencies. But they are not equal: the 12-GHz band has almost 2½ times the channel capacity of the ITFS band. The choice should be made on the basis of traffic: initial channel demand and projections for growth over the first few years of an operational service will determine system configurations and relative costs. It can already be seen, as planning activities of the Public Service Satellite Consortium proceed, that the choice will depend upon the traffic and its consequent economics.

The practicality of large-area satellite broadcasting into simple, small, low-cost ground stations operable by nontechnical users has been demonstrated. Parallel experience with variations of the technology in two different radio-frequency bands allocated to satellite broadcasting can be

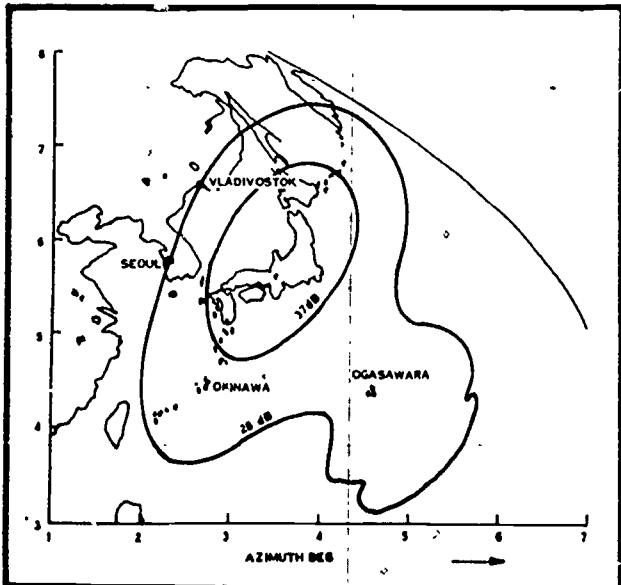


Figure 17.³ JBS Antenna Coverage

used to expand the base of user experience and to compare the bands. And one country has already applied the technology in choosing an optimized version of a satellite broadcasting system for its own needs. The technology is clearly practical; it can be economically attractive. Its effective transfer to economic application remains to be accomplished.

This paper reflects the contents of the American Institute of Aeronautics and Astronautics Paper No. 75-893, July 21, 1975.

NOTES

1. Metzger, Sidney; *Communications Satellite Systems in the 70's*. Symposium on Long-Term Prospects for Satellite Communications, Institute Internationale Delle Comunicazioni; Genoa, Italy: June, 1971
2. Marsten, Richard B., and Gubin, Samuel; *A Direct-to-Home TV Satellite System for 1970; Communication Satellite Systems Technology*, Marsten. Academic Press, New York, London: 1966.
3. Courtesy GE Space Division, Valley Forge, Pennsylvania.



Harold E. Morse is presently director of education programs with the Appalachian Regional Commission in Washington, D.C., a post he has held for the past two years. Prior to that, he has held various appointments within the commission, including that of director of the Appalachian ATS-6 Education and Health Experiments. Dr. Morse has served on several advisory committees including the Advisory Committee on Rural Problems, the HEW Secretary's Committee on Urban-Rural Problems, the Advisory Committee on ESEA Title III, and the National Academy of Sciences Committee on Hearing Technology. He is widely published in the area of education in Appalachia and has a book for Random House in press, *The Federal Education Establishment*. Dr. Morse attained his Ph.D. in education at the University of Washington and his M.S. at the State University of New York in Oswego.

Satellites for Education

**Harold E. Morse
Appalachian Regional Commission**

The immediate educational objective of the Appalachian Education Satellite Project (AESP) is to improve the effectiveness of the classroom teacher, thereby upgrading the quality of reading and career-education instruction available to Appalachian students. The question to be answered by the AESP and similar projects is: Can the linking together of existing organizations like the Regional Educational Service Agencies (RESA's), and communications satellites result in more effective and significant in-service teacher training.

The educational ramifications are overwhelming when the project is viewed as a demonstration of the feasibility of producing high-quality, revenue-shared courses in multiple disciplines for cross-state delivery via satellites. More specifically, the AESP, as an experiment in the applications of space-age technology to education:

1. explores the feasibility of using fixed-broadcast satellites and linking terrestrial communications systems to deliver educational services;
2. examines the effectiveness of the instructional sequence of televised lecture, audio questions with immediate feedback, ancillary practice activities, and review testing;
3. broadens understanding regarding workable ways to organize trans-state projects conceived to solve common problems when greater economy and quality is promised by large-scale delivery and resource pooling;
4. develops procedures for preparing software for heterogeneous audiences and various hardware systems;
5. demonstrates the feasibility of developing central computerized information systems for delivery via satellite;
6. demonstrates the feasibility of utilizing future communications satellites with increased broadcast channels and air time, in order to increase course options and make quality education equally accessible to all parts of the country.

The AESP has had a number of distinct levels of growth and operation. The first phase might well be labeled the pre-planning phase. The remaining phases have included planning, development, operation, and evaluation. As one might suspect, this program has had many overlapping and concurrent activities within these phases. An overall project description is thus best described by outlining the organization structure, program operation, and content; the project accomplishments; the apparent program impact; and, finally, what possibilities lie in the future.

The basic organizational structure of the AESP project can be divided into three main components: the Appalachian Regional Commission (ARC), the Regional Education Service Agencies (RESA), and the Resource Coordinating Center (RCC).

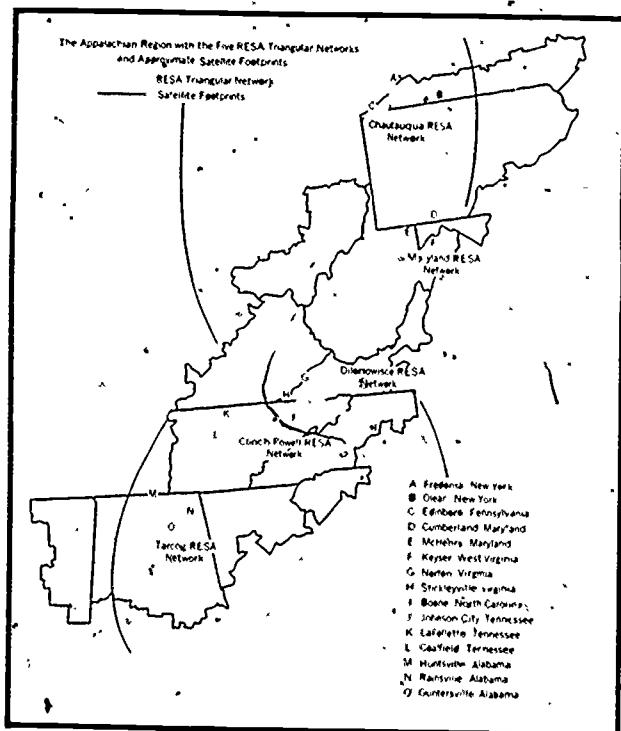
The Appalachian Regional Commission has been responsible for the overall development and management of the project. In meeting this responsibility, the Commission has worked in a complex framework of interagency participation to achieve the programmatic and technical objectives of the project.

In establishing and insuring that the project's programmatic objectives are met, the Commission staff has maintained a close working relationship with the National Institute of Education (NIE). This

has been accomplished through weekly contact and reporting, as well as through a continuous series of site evaluations, by both an in-house NIE evaluation team and the Educational Policy Research Center at Syracuse University. Thus far, the NIE has been favorably impressed with the impact and operation of the AESP project.

In pursuit of the technical objectives of the experiment, the Commission staff has maintained working relationships with a number of additional agencies. In designing, implementing, and operating the AESP communication network, close coordination has been maintained with the NIE (plans review), Department of Health, Education, and Welfare (terrestrial system), National Aeronautics and Space Administration (space system and vehicles), Federation of Rocky Mountain States (engineering, installation, and maintenance), and the other experimenters on the ATS satellite (scheduling).

Returning to the project's other main components, the implementation of the education experiment conceived by ARC is the function of the RESA's and the Resource Coordinating Center.



*The Regional Education Service Agencies (RESA's) are best defined as confederations of school districts, sometimes called educational cooperatives, regional education service centers, or cooperative educational service agencies. Before the conception of the AESP, New York and Pennsylvania had established networks of RESA's.

Kentucky, Tennessee, and West Virginia had permissive legislation authorizing the establishment of RESA's, and North Carolina had regionalized organizations similar to RESA's. School districts in the 48 Appalachian counties participating in the AESP joined together to form RESA's for participation in the project.

Initially, five lead RESA's and up to two associate RESA's per lead RESA were approved for participation in the AESP project. During on-site surveys three antenna locations per lead RESA were selected, and thus the 11 participating RESA's with the 15 receiving sites, where class sessions were to occur, were established. (See Figure 1 for participating sites.)

It has been the responsibility of the RESA's to coordinate project-related activities at the local level. To be specific, during the project, the RESA's have:

1. developed administrative structures for the management of project activities;
2. arranged for local universities to grant graduate credit for teachers participating in the AESP courses;
3. staffed a Project Advisory Council with teachers, administrators, representatives of local boards of education, and representatives of local institutes of higher learning;
4. gathered information on local programs and audio/visual equipment, to assist in the development of pre-service site-utilization, teacher-selection, administration, engineering, and evaluation plans;
5. consulted with the ARC and the RCC on program and scheduling guidelines;
6. in general, provided the liaison between the local community and the ARC on matters concerning the AESP.

The Resource Coordinating Center (RCC) is the institution which has responsibility of producing the project's software and participating in the day-to-day operation of the project.

The RCC employs a management-by-mission concept for the programmatic and procedural role in the AESP. The following breakdown-by mission illustrates how the RCC organization units are based on its related objectives:

1. The Reading Component is to:

- A. develop a course of 12 pre-taped programs in reading instruction for teachers of students in grades K-3 for broadcast in the summer of 1974;

B. develop four live, interactive seminars for elementary teachers in the summer of 1974;

C. select and develop supplementary instructional materials (ancillary materials) to augment the television and four-channel audio instruction.

2. The Career Education Component is to:

- A. develop a course of 12 pre-taped programs in career education for teachers of students in grades K-6 for broadcast in the summer of 1974;
- B. develop four live, interactive seminars for elementary teachers in the summer of 1974;
- C. develop 16 live, interactive seminars in career education for teachers of students in grades 7 through 12 for broadcast in the fall of 1974;
- D. select and develop for the career education courses supplementary instructional materials (ancillary materials) to augment the television and four-channel audio instruction.

3. The Television Component is to:

- A. produce the televised reading and career education courses;
- B. broadcast the televised reading and career education courses.

4. The Four-Channel Audio Component is to:

- A. develop a series of four-channel one-day audio programs in reading and career education for broadcast to teachers participating in the AESP courses.

5. The Information Systems Component is to:

- A. develop a combination of computer-based and manual systems for storing, retrieving, and delivering information and instructional materials in the areas of elementary reading and career education to the teachers enrolled in the AESP courses;
- B. supply the 1,200 teachers in the reading and career education courses with computer-managed instructional materials.

6. The Evaluation Component is to:

- A. design and implement formative evaluation strategies;
- B. design and implement summative evaluation strategies.

7. The Management Component is to:

- A. develop a RCC management system;
- B. coordinate and manage RCC project activities;
- C. establish a Planning and Development Committee, composed of management and content and field personnel, to assess mission progress against project and mission guidelines.

The primary responsibility for day-to-day maintenance of each of the components is delegated to the appropriate mission director; and within this framework the objectives of the project are translated into the finished products.

Although the project will not reach its final conclusions until late 1975, many things have already been accomplished and are fact. It is fact that 1,200 teachers in Appalachia have completed, or are taking, in-service courses provided by the AESP. It is fact that these courses are graduate credit courses with 14 institutions of higher education in Appalachia offering for their successful completion. It is fact that a sophisticated satellite communication network has been established which includes:

1. fifteen receiving sites in Appalachia equipped with TV receivers, four-channel audio equipment, teletype intercommunications, libraries, and special instructional materials with trained satellite communicators at all 15 sites;
2. two of the most powerful communication satellites existing: ATS-6 and ATS-3;
3. two satellite uplink stations located in Denver, Colorado, and Rosman, North Carolina;
4. two network coordination centers located in Denver, Colorado, and Lexington, Kentucky.
5. agreements with central PBS and local PBS stations to provide, where and when available, an extensive terrestrial backup.

It is also a fact that a Resource Coordinating Center has been established where four graduate credit courses have been developed which included extensive auxiliary materials with a highly imaginative computer support activity; a video production and satellite broadcast center established at the Resource Coordinating Center in Lexington, Ky., has produced over 64 hours of video broadcast via ATS-6 and over 720 hours data/voice transmission via ATS-3; the video programs produced for broadcast have been of such a quality that the State of Tennessee has contracted for their use, and the state departments of Maryland, Vir-

ginia, New York, and North Carolina are also indicating their specific interest in the same; and PBS has shown interest in AESP-produced video tapes, with PBS/KET to begin broadcast of AESP produced material early 1975 in Kentucky.

It is fact that special regional demonstrations utilizing the satellite communication network have been successful, proving to be highly effective in the regional exchange of information. It is fact that in-service programs previously unavailable in many parts of Appalachia are now available. It is fact that there is a nucleus of trained teachers that can work with RESA's to provide similar experiences for their colleagues, and this training was a direct result of the AESP. It is fact that extensive data has been compiled and now is being analyzed in order to assist others in their attempts with similar projects.

It is difficult to fully assess the impact of the AESP at the present time; however, some preliminary conclusions can be stated. Most of these conclusions are based on feedback from the NIE evaluation which, as noted previously, included an outside evaluation by the Education Policy Research Center, Syracuse University. Other conclusions are based on data collected throughout the program by the project's evaluation component, and on data gathered by expert consultants appointed by the project director.

Two points that are exceptionally clear now are that the teacher response has been overwhelmingly favorable, and that there has been a high degree of classroom use of the concepts taught during the program, both in Reading and Career Education. To a large degree, this application of the knowledge garnered during the program is based upon support the teachers have received from their schools during their participation. However, it should be noted that the teachers perceived the courses as being "most relevant and useful" for the "real" classroom situation. In many instances, participants organized small groups in their schools to present and discuss the material covered during the program. Thus, it appears that the broadening of the initial knowledge base in the teaching of reading and career education throughout the participating areas has begun.

In terms of the effectiveness of the media, initial response to the seemingly complex equipment was surprisingly favorable; however, there was anxiety on the part of some teachers who were totally unfamiliar with much of the equipment. This "fear" of technology was quickly dissipated, and a wide, general acceptance of satellite telecommunication technology now exists.

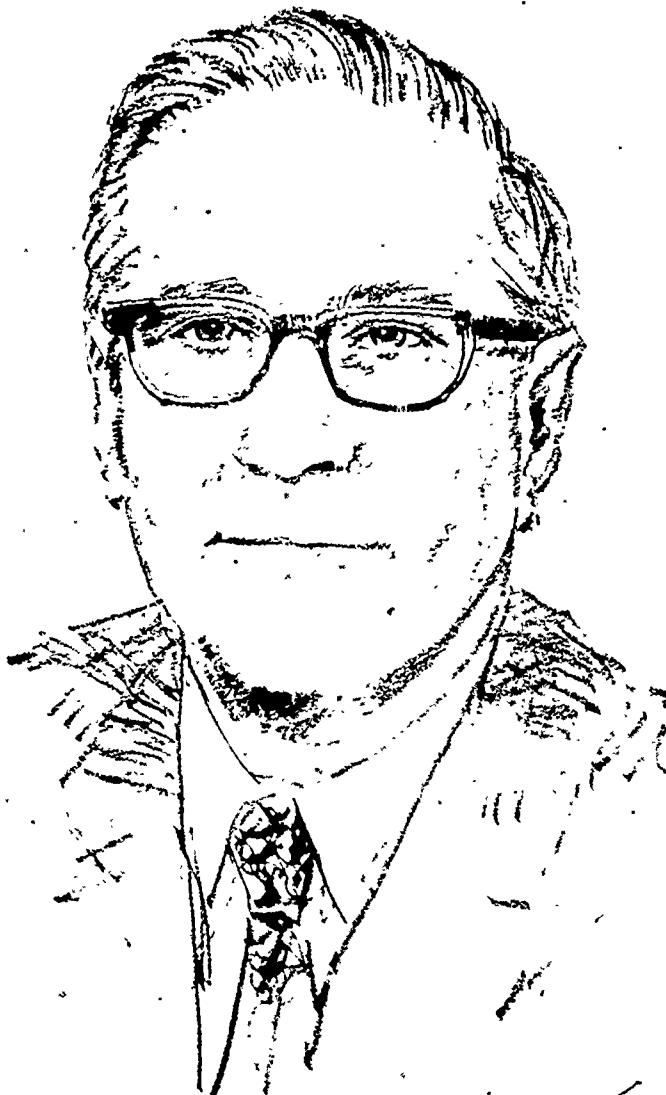
Institutionally, the impact of the AESP is much more difficult to document, yet the following observation may be made.

Some of the RESA's have utilized the AESP as a major stepping stone in their long-range goals for an educational telecommunications system for their communities. This local telecommunications network is seen as having a strong influence on the local community in the future through community educational programs.

The AESP has achieved a major goal of facilitating the sharing of materials and expertise between several heretofore separate entities within the educational system. The participating RESA's have begun cooperative programs that now act across counties, as well as state boundaries. Institutions of higher education have provided tuition-free credit to participants in the AESP when the

courseware was not developed by these institutions, and when, in some cases, the content of this courseware may not have been a traditional area of interest for the institution. It should also be noted that the standards for successful performance in the AESP programs were not set by these institutions. In effect, for the first time in the region, a major group of **diverse** educational institutions (diverse both geographically and philosophically) are cooperating together in order to offer educational services to the widely-dispersed residents of the region.

Finally, when the AESP began operations in 1973, there was no national policy on satellite communications. The AESP, along with the other HET experiments, has kindled a major governmental discussion in an effort to affect a national policy dealing with telecommunications and, more specifically, satellite communications.



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The National Education Association Satellite Experience

**Harold E. Wigren
National Education Association**

One of the major purposes of the National Education Association's programs is to reduce isolation for teachers in remote areas by providing continuing educational opportunities, and by making possible the interchange of ideas between peers. By doing so, we hope to provide an incentive for individuals to teach in these rural areas.

So it shouldn't be at all surprising that all three of the major satellite radio experiences on ATS-1 in which NEA has been involved in the past three years have something to do with Alaska.

The three are: the Satellite Seminar, a weekly teleconference for teachers, offered first as a roundtable, then as a credit course in conjunction with the University of Alaska College of Education; NEASAT, a teacher center of the air in which Alaska and Hawaii teachers participate; and the *Pan-Pacific*

Satellite Series, in which not only teachers from Alaska and Hawaii, but also teachers from Fiji, New Zealand, Rarotonga, Nieu Pau, New Guinea, Saipan, and American Samoa, are expected to participate.

I should explain that NEASAT is planned, controlled, and evaluated by teachers as an open learning opportunity, but not as a formal credit course.

The Pan-Pacific Satellite series is a pilot series of three programs which we hope to offer monthly, beginning next October. This series is being offered as part of NEA's observance of the American Bicentennial. Satellite communication was selected by teachers nationwide as one of 12 major Bicentennial activities in keeping with the NEA Bicentennial theme, "A Declaration of Interdependence: Education for a Global Community."

In addition to the above three experiments, the NEA conducted a satellite radio demonstration on ATS-1 in Chicago last year before 12,000 delegates to its annual convention. Next year, at the NEA convention in Miami, we will be conducting a demonstration on CTS, which will be a two-way television exchange between teachers and students in Ottawa and teachers and students in Miami. Comsat Laboratories are furnishing us, at cost, the use of one of their 15-ft. portable earth terminals for this experiment.

The demonstrations, too, are in keeping with the reasons for which NEA is involved in satellite experiments. In addition to reducing isolation in remote areas, it is our purpose:

1. to create an awareness among teachers of the possibilities satellites hold for education in the future;
2. to explore the potential of satellite communications for building a global community of interests;
3. to test the feasibility of satellite communications as a viable delivery system for the Association on a longterm basis, and thus to assess the needs of the teaching profession for satellite space.

Let me discuss some of the unusual aspects of our experiments to date, before going on to tell you some of the lessons we have learned.

As indicated by my program descriptions, these experiments are aimed at a teacher audience for professional development purposes. They bring together the Alaska and the PEACESAT networks with Washington, D.C., and are conducted at midnight, or 1 a.m. Washington time, which is 7 p.m. Fairbanks and Honolulu time and 4 p.m. the next afternoon, New Zealand time. Facilities used at the

Washington end are those of the National Library of Medicine.

Villages and islands participating "take turns" in providing major resource persons for each program in the series, so that the programs do not originate and emanate from Washington as the fountainhead of all knowledge.

Discussion questions and support materials are sent out in advance of each program so participants can be prepared in advance. A planning session is held by approximately 10 representatives from the participating locations at a central point, followed by one or more follow-up sessions by satellite prior to the start of the series. This has assured that teacher input would be obtained.

That teacher participation is vital. We have learned that in rural communications it is just as important (if not more important) for communications to go from the bottom up as from the top down! It is important that village people be able to produce as well as consume. They need to get their ideas out to other people every bit as much as they need to listen to or view someone else's ideas.

On the operational side, we have learned to beware of the nature of course requirements, when a course is offered for credit. We lost several of our credit students because the assignments were too involved, too theoretical, and required too much written work to be forwarded to the University via mail. Again, we were guilty of relying too much on the written word as the only "legitimate" basis on which to give grades.

We learned the hard way that it is imperative to maintain earth terminal and transmit equipment in top operating shape. All too frequently signal interference and quality was little better than ship-to-shore quality, depending on the position of the satellite at a given time. As a result, the transmission was garbled. This created the need for much repetition and even extreme frustration on the part of listeners who would miss large portions, or strategic sections, of transmissions, and thus miss a point on which they would be tested later.

It is also important to allow sufficient "lead" time for mailing discussion questions and support materials to villages and islands in advance of the program. Sometimes the mail plane is able to land in an Alaskan village only once per week in winter, and often we discovered at program time that the materials had not arrived.

A point that cannot be stressed too highly is the importance of a site coordinator to serve as a clearinghouse for the series in each village or island. This person is responsible for making necessary arrangements for listening or viewing in advance of the program, and for making certain that

teachers are reminded of the program time and topics, that the listening room is open and heated (or cooled), and that feedback is obtained from the participants.

By way of illustration, on one mission to Alaska our UNESCO team left a videotape port-a-pak recorder in Stebbins, a village on the Bering Sea, after teaching the villagers how to operate it. We had urged them to tell a story visually, one they wanted others to know. When we returned, they had produced a video letter to the governor of Alaska, informing him, via camera, about some of the critical problems they were encountering, such as lack of fresh water supply, sanitation, and even refrigeration. (It came as a surprise to us that Eskimos would ever need an ice box!)

If the programs are to be successful, they must have maximum involvement of teachers in their planning and implementation. Teachers must feel that they are part of the decision-making process and have some way to determine or affect what happens. Programming determined by users is a more valid concept than intellectual cropdusting.

The most important aspect of the experiments has been the interactive nature of the programs—the teacher-to-teacher exchanges. Repeatedly, teachers comment in their evaluation reports that this to them is the strongest feature of satellite communications.

Teachers are more interested in exchanging ideas and teaching strategies with each other than with "experts" from Washington or from some other place. Each teacher who participates thinks of himself or herself as an expert with something to contribute. A resource person in Washington or Baltimore—or even Seattle—has probably not taught Eskimo children in an Alaskan village at 50 degrees below zero, even though he may be an authority on open learning! Of course, depending upon the subject, teachers have on occasion welcomed an expert on the program.

Such a coordinator is the "ground contact" needed to know what is happening at that location—or what isn't happening!

We were able to pinpoint some areas of differences and others of similarities, from culture to culture in our audience of teachers in isolated areas.

Alaskan teachers want to discuss topics that are of practical use for them, something they can take action on the next morning, rather than engage in theoretical or philosophical discussions. Most Alaskan teachers are action-oriented. Alaska is that kind of place! This situation we found to be less true in the Pacific, where the teachers were much more inclined to speak in depth about philosophical concepts underlying their adoption of given teaching strategies.

One might ask, in conclusion, the same question posed by Henry David Thoreau in the late 19th century, when the United States was endeavoring to complete its continental communications network:

We seem in a great hurry to build a magnetic telegraph between Maine and Texas, but it may well be that Maine and Texas have nothing to say to each other.

After nearly 100 years, we can say now that Maine and Texas have had a great deal to say to each other as they have learned to know each other's people and places better, exchanged goods and services, and developed a better understanding and appreciation for their likenesses and differences. So has it been with our satellite communications experiments.

We are now finding that Wellington, New Zealand, and Nulato, Alaska, do indeed have something to say to each other. Hopefully, as we continue to use this newest form of technology more and more effectively, we will increase not only our appreciation of one another, but also our interdependence on each other in the larger global community of which we are a part.

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Satellite Communication for Medical Education and Health Care Delivery in the Pacific Northwest and Alaska

**M. Roy Schwarz and Marion Johnson
University of Washington**

It seems appropriate, at a conference on *Designing Diversity*, to present a review of our experiences with the ATS-6 communication satellite to conduct the WAMI program, a nontraditional or unorthodox experiment in medical education. My review is made up of four parts: first, the problems in medical education and health care delivery that exist in the Pacific Northwest and Alaska; second, a brief overview of the WAMI program in decentralized medical education, including undergraduate medical education (UGME), graduate medical education (GME) or residency and house staff training, and continuing medical education (CME) for practicing physicians; third, the types of satellite experiments which were conducted via the ATS-6 satellite; and fourth, the lessons which were learned and the conclusions drawn from these experiences.

Pacific Northwest and Alaska

In the Pacific Northwest and Alaska there exist four states which are fondly referred to as 'the "WAMI territory". These include Washington, Alaska, Montana, and Idaho and, as a result, provide the acronym of "WAMI". These four states collectively represent 22 per cent of the land mass of the United States, cover five time zones, and have cities separated by distances exceeding the distance from Los Angeles to New York City. As a consequence, there are enormous geographic barriers which must be surmounted in any effort concerned with regionalized medical education. As an example of the immensity of the land mass encountered, when the tide recedes in the state of Alaska, more land is recovered than exists in the entire state of Texas.

While the WAMI territory offers a variety of options for living and recreation, it also has some serious problems.

First in the area of health education, the University of Washington School of Medicine, located in Seattle, is the only medical school in the four states. In addition, the states of Alaska, Montana, and Idaho are financially unable to build and operate a medical school of their own, and the state of Washington cannot build and operate a second medical school even though it has the population to justify it.

Second, there has been enormous expansion in the pool of applicants for medical school, such that two or three qualified applicants are being rejected for each one accepted into medical school. As a consequence, there has been a growing tendency on the part of state-supported medical schools to limit enrollment to residents of the supporting state and, as a consequence, to discriminate against residents from states without medical schools, such as Alaska, Montana, and Idaho. Moreover, in the graduate medical education (GME) arena, there is also a limited number of training slots which are available for graduates of the medical school in the Pacific Northwest and Alaska. Since between 50 and 70 per cent of those physicians who receive graduate medical education in a given area remain in that area to practice, this limitation becomes an enormous significance. Finally, because of the geographic and communication barriers in the WAMI territory, there are only a limited number of options available for continuing professional development of practicing physicians. This is especially critical in rural areas of the four states, which include the great majority of the WAMI territory.

Third, in addition to needs in health education, the WAMI territory has vexing and challenging

health care needs. In the first place, there are not enough primary care physicians in the WAMI area at this time, and they are mainly clustered around major metropolitan centers. As a consequence, there are large rural areas with sizable numbers of people who have insufficient numbers of primary care physicians available to them. This, coupled with the progressive trend toward early retirement for physicians, leads to an inadequate pool of manpower which is not distributed according to population needs. As a consequence, there is great variation in the health services which are available.

The WAMI Program

In 1968, the University of Washington School of Medicine responded to these problems by modifying its curriculum. In the new curriculum, time was made the variable and achievement the constant. In addition, clinical material was introduced in the first year of medical education, and a great deal of elective options and flexibility of career training were made available to undergraduate medical students. Included was a family medicine pathway, designed to attract and train students in the area of primary care.

The availability of the "new" curriculum set the stage for the development of the WAMI experiment in decentralized medical education. This experiment, which was conceived in December of 1969 and implemented in March of 1971, has two major phases. The first, or **university phase**, has as its goal the presentation of the entire first year of undergraduate medical education at universities without medical schools in the four WAMI states. Included among the institutions which are currently presenting the first year of medical studies are the University of Alaska in Fairbanks, Montana State University in Bozeman, Washington State University in Pullman, and the University of Idaho in Moscow. Upon completion of the first year of the curriculum, students return to the University of Washington School of Medicine in Seattle where they continue through the second year of their training and for the majority of the third. Once they have had the basic clerkships in the various subdisciplines of medicine, including internal medicine, pediatrics, obstetrics and gynecology, surgery, and psychiatry, the students are then able to choose experiences in the **community phase** of the WAMI program.

The goal of the **community phase** is to provide students and residents in graduate medical education with a first-hand experience in being a practicing physician in a community. To achieve this, practicing physicians are made clinical faculty members of the School of Medicine, and are

paid for their efforts. Students and residents are sent to the participating physicians' communities to spend from six weeks to six months training with them. While there, students not only diagnose and treat disease but they also gain a glimpse of the roles, challenges, and demands which are made on a practicing physician. It is anticipated that by such exposure, residents who are receiving their training in graduate medical education would choose communities such as these to settle in and practice. In order to monitor this program, faculty from the School of Medicine journey to these "Community Clinical Units" every six weeks to assess the progress of the student and resident, to provide input into their training as deemed desirable, and to provide back-up assistance and education for the physicians and other health professionals who are practicing in the area. In this way, the continuing medical education resources of the medical center are brought to the community level to keep physicians abreast of modern trends and knowledge and skills.

1. **Family Medicine:** Kodiak, Alaska; Omak, Grandview, Anacortes, and Whidbey Island, Washington; and Whitefish and Kalispell, Montana.
2. **Pediatrics:** Pocatello, Idaho; Great Falls, Montana; and Spokane, Washington.
3. **Internal Medicine:** Billings and Missoula, Montana; and Wenatchee, Washington.
4. **Obstetrics and Gynecology:** Boise, Idaho.
5. **Psychiatry:** Anchorage, Alaska.

In the on-going conduct of the WAMI program, there are two continuing challenges, including communication between the disparate parts of the educational program and the control and monitoring of the educational experiences. Hence, it has been necessary to define ways in which unique resources located in Seattle, such as a protein biochemist, an endocrinologist, or an authority on burns, can be shared with institutions and communities which do not have this kind of expertise. For this reason, the School of Medicine was intrigued by the possibilities that two-way, interactive video communication (full-duplex video) and full-duplex audio might offer in meeting these challenges, and undertook a series of experiments via the ATS-6 satellite to explore these possibilities.

The ATS-6 Communications Satellite Program

In the experiments with the ATS-6 satellite between Seattle and Fairbanks, full-duplex video and full-duplex audio were available. In contrast, one-way video or half-duplex video and full-duplex

audio were available between Seattle and Omak. Finally, the video signal was transmitted between Seattle and Fairbanks in color, while the signal between Seattle and Omak was mainly in black and white, although a portion of the experiments were conducted in color for comparison. It should also be noted that the ATS-6 satellite was not designed specifically to serve as a resource for a health education and health service delivery. Therefore, adjustments in the experimental design had to be made to accommodate the existing technology, and not vice versa.

Begun in September, 1974, and continuing through May, 1975, the following kinds of experiments were conducted.

1. **Student affairs.** In the student affairs experiments, admissions interviews were conducted in which a portion of the admissions committee was located in Seattle, while the candidate and the remaining portion of the committee were located in Fairbanks, Alaska. In addition to the admissions interviews, student advising, counseling, and orientation were conducted with the advisor, counselor, or orientor located in Seattle and the students in Fairbanks. Class meetings were also held between students in Seattle and students in Fairbanks, in an attempt to reduce the feeling of isolation students occasionally felt at the University of Alaska and to improve their integration into the medical school class in Seattle.

2. **Curriculum—university phase.** In the university phase curricular experiments, lectures, small group discussions, and laboratory and clinical demonstrations were transmitted from Seattle to Fairbanks and vice versa. For example, a neurophysiologist gave a demonstration on spinal reflex arc, including an experimental animal preparation which demonstrated the principles of this arc, in the same way students in Seattle were exposed to this phenomenon. In addition, patients with strokes and other abnormalities of the nervous system were also presented from Seattle to the students in Alaska at the same time that they were studying the nervous system course.

3. **Curriculum—community phase.** In the community phase portion of the curricular experiments, students presented cases (patients) which they had prepared to their mentors in Seattle, who in turn assessed the skill with which they had performed the patient workup and the knowledge which they had about the patient. In addition, the mentor in Seattle was able to offer the student assistance in evaluating the particular problem at hand, and in this way contributed to the education of the student. Also, case studies with a discussion between faculty located in Omak and in Seattle

were conducted via the satellite. Finally, continuing education was conducted via specialty conferences in such disciplines as radiology, psychiatric counseling, and general internal medicine.

4. Health care delivery. In the area of health care delivery, a series of consultations were held between dermatologists located in Seattle and patients located in Fairbanks. In these experiments, the dermatologists reviewed the nature of the disease, suggested a diagnosis, and also suggested a form of therapy to the non-dermatologist physician who was located in Fairbanks. In addition to the dermatology consultations, discussions and consultations were provided in radiology, rehabilitation medicine, psychiatric screening, and psychiatric therapy.

It should also be pointed out that while the School of Medicine was conducting the above experiments, the Indian Health Service was carrying on a series of health care delivery experiences between major cities in Alaska and small villages in the bush part of our 49th state. In these experiments, village health aides, located in the villages on a permanent basis, served as the health care providers while Indian Health Service physicians, located in towns and cities, served as consultants. In these experiments, interactions were limited to half-duplex black and white video and half-duplex audio.

5. Evaluations. In the evaluation of students' performances, a series of experimental evaluations were conducted, including oral and laboratory exams. In addition, students were allowed access, via the satellite, to the computer-aided evaluation (CAE) data banks, which were located at the Ohio State University in Columbus, Ohio, to determine whether this could be used effectively. In this experiment, the link between the terminals in Fairbanks and Seattle, was made via the ATS-6 satellite, and the computer at Ohio State University was linked to Alaska via telephone ground line. This particular experiment was designed to determine to what extent the independent study program, which has been in existence at the University of Washington School of Medicine for four years, could, with its attendant computer-aided instruction and evaluation modules, be transplanted to a university without presenting the entire independent study program.

6. Administration. In the administrative realm, a series of conferences between faculty, students, and administrators were conducted. The purposes of these conferences were planning, working out differences of opinion, analyzing budgets, and evaluating the progress of the program.

Lessons Learned and Conclusions Drawn

While a variety of conclusions may be drawn from the experiments which were conducted via the ATS-6 satellite, only five will be discussed in this manuscript. The remainder are the subject for a larger paper which is being prepared on the experiences with the ATS-6 satellite. The five are:

1. Video and audio interaction was a necessary prerequisite for the successes of the admissions interviews, the counseling sessions, the administrative conferences, the laboratory and clinical demonstrations, the small group discussions, the case presentations, and the health care delivery experiments. It was concluded that if full-duplex, color video and full-duplex audio is available, it is in large part possible to communicate in this way, and therefore significantly reduce the commuting of faculty and staff.

2. Color video adds a necessary dimension for certain of the experiments, but was especially critical for the dermatology consultations, clinical and laboratory demonstrations, and laboratory evaluation, and, in some cases, the psychiatric counseling. Without it, it would be simply impossible to conduct the visual assessments which are necessary.

3. It is possible to conduct a major educational program and deliver health care via interactive communications satellite, and in so doing, share resources and avoid travel. This is especially true of those components of education and health care delivery which required video signals.

4. None of the satellite experiments were, however, any better than the "software" preparation that preceded the broadcasts. In these experiments it became apparent that an enormous amount of software preparation was necessary in order to have effective programs which could be evaluated in the appropriate manner. It is our opinion that without this investment in software, the experiments should not be conducted.

5. Interactive video and audio has broad applicability, and hence will play a major role in both health education and health care delivery in the future. With this telecommunication link, it should be possible to avoid the necessity of building three or four new medical schools in the WAMI territory. At the same time, it should be possible to accomplish the programmatic goals of communication between the component parts and evaluation of the educational experiences in the WAMI undertaking. Since the satellite does not respect time, geographic, or political boundaries, its applicability seems almost limitless.

Hon. H. Rex Lee, former governor of American Samoa and ex-federal communications commissioner, who was scheduled to participate in this session of Designing Diversity '75, was unable to do so. At this meeting, Frank Norwood, the session chairman and himself a member of the Public Service Satellite Consortium board of directors, substituted for Governor Lee. Through the kindness of the American Institute of Aeronautics and Astronautics we are able to include here the text of Governor Lee's paper prepared for the Conference on Communications Satellites for Health/Education Applications, sponsored by the American Institute of Aeronautics and Astronautics, the Veterans Administration Department of Medicine and Surgery, and the Joint Council on Educational Telecommunications, held in Denver, Colorado, July 21-23, 1975.



Today's Planning for Tomorrow's Needs

**H. Rex Lee, Chairman
Public Service Satellite Consortium**

A new organization, the Public Service Satellite Consortium, was incorporated in March. Its membership consists of educators, health care specialists, and communications experts excited by the results of an array of health and education experiments on NASA's ATS-6 satellite. The goal of the Consortium is to see that the technology demonstrated by the NASA-based experiments becomes the basis for a permanent, operational system. The Consortium will attempt to identify and aggregate potential users, to arrange communications services on a cost-sharing basis, to assist in coordinating telecommunications planning by public and private institutions, and to develop practices encouraging the use of new telecommunications services.

I. Why a Public Service Satellite Consortium?

The origin of the Public Service Satellite Consortium is to be found, not among those in the aerospace industry anxious to sell satellites nor among those domsat common carriers seeking new markets. Uniquely, the Public Service Satellite Consortium came about because potential users of satellite communications found it necessary to join together in the expectation that a new generation of communications satellites can be brought into being. That the technology is at hand for communications satellites so powerful that they can provide service to small, unsophisticated, and inexpensive earth stations has already been demonstrated by NASA's ATS-6 and will soon be underscored by the joint US-Canadian Communications Technology Satellite.

Now, after less than a year's experimentation in the application of high power satellite technology in education and health care, ATS-6 has been moved in orbit and is being readied for SITE in India. CTS is still some months from launch and will not be available for experimentation until a few months before ATS-6 is returned to 105° West.

Those in Alaska, the Rocky Mountains, and Appalachia who have experienced, firsthand, the benefits of satellite communications for health and education now find themselves deprived of those benefits. Others in health care, education, and public service who watched the ATS experiments with growing interest have joined with the experimenters in their concern that a technology of such power and relevance must not be allowed to disappear, literally and figuratively, over the horizon.

That concern is made all the more urgent by the realization that none of the U.S. domestic satellites now in operation or planned is capable of providing the kind of service which ATS-6 has demonstrated. While CTS will become available in 1976 and ATS-6 will return in the autumn of that year, the satellites will be open only for further experimentation. NASA's mandate from the Congress clearly precludes the agency from providing an operational service. Further, the administrative decision to curtail NASA's communications programs was made on the announced assumption that a point in the development of space communications has been reached at which the private sector can be relied upon to carry developments forward. It is increasingly clear that such an assumption is questionable, and the absence of any proposal for commercial equivalents of ATS-6 and CTS for domestic service confirms such doubts.

The Public Service Satellite Consortium represents an organized response to this challenge. Generated spontaneously by the coming together of those who have already used ATS-6, those who plan

to use CTS, and others who perceive the social potential of powerful satellites serving small aperture terminals, the root question to which the PSSC must address itself is: How can an appropriate operational system be brought into being? The technology has been - and continues to be - demonstrated. Opportunities for experimentation have been provided by NASA and a first generation of experiments has already confirmed hopes that there is an enormous potential to be realized. But how shall we get from here to there? How shall we move from the tentative and transitory status of "experimenters" to the secure and stable category of "user?"

II. The Development of the PSSC

The Public Service Satellite Consortium crystallized quickly. The first gathering of parties at interest took place in Palo Alto, California, November 4-5, 1974, at a meeting organized by INTASA and Stanford University under a contract from the National Institute of Education. The meeting was designed to explore the possible development of university-level television materials for inter-institutional use and the role which a communications satellite system might play in providing a new mechanism to promote the inter-institutional exchange of courseware. I was invited to that meeting and was asked to become acting chairman of the panel on organization.

There followed two days later a similar meeting in Denver, hosted by the Federation of Rocky Mountain States and attended by many of the ATS-6 experimenters, all of whom shared a common concern that NASA's experimental satellite would soon be departing for the SITE experiment with no replacement in sight. Because I fell heir to the committee on organization in Palo Alto, I was asked to chair a similar group in Denver.

The concerns of those who gathered in California and those who met in Colorado were so highly congruent that it immediately became apparent that all of the parties should be brought together and that other persons who shared our interest should be invited to join the cause. All of us resolved to hold - as rapidly as feasible - a more broadly based organizational meeting at which as many interested parties as possible could be gathered.

Although lack of time and resources prevented us from publicizing the meeting as widely as we should have liked, a conference - open to all - was convened in Denver December 18-20. It was at that meeting that the Public Service Satellite Consortium was born. Eleven persons, representative of public broadcasting, education, and health care delivery, were chosen to act as a steering committee

for the new organization and charged by all those who attended the meeting with the task of getting the show on the road. I was asked to chair the steering committee and Donald R. Quayle, senior vice-president of the Corporation for Public Broadcasting, was elected vice-chairman.

The task of the steering committee was to work closely with our attorney to hammer out a proposed set of articles of incorporation and by-laws to be submitted for the approval of all those interested in joining with us in the formation of a permanent organization. The steering committee met in open meeting in Washington in January, consulting not only with other potential members of the Consortium but with those at the Office of Telecommunications Policy, NASA, and the Department of Health, Education, and Welfare, who gave the consortium concept helpful encouragement and useful advice. The January meeting was held to prepare for a PSSC organizational meeting scheduled for February 19-21, and hosted by San Diego State University.

To the greatest extent possible, the meeting was publicized within the health, education, and communications communities and all interested parties were encouraged to attend. It was made clear that the purpose of the meeting was to provide an opportunity to help shape the Public Service Satellite Consortium, its articles of incorporation and by-laws and its future. Out of that San Diego meeting came a charge laid upon Gov. Jack Campbell, president of the Federation of Rocky Mountain States, Donald Quayle, and myself to serve as incorporators of a permanent, not-for-profit public entity, the over-arching purpose of which is to work toward bringing into being on an operational basis those kinds of services which experimental satellites have shown to be possible.

III. PSSC Goals

The Public Service Satellite Consortium's prime task will be to identify and develop the potential user community. That process parallels the marketing phase which a commercial carrier might undertake, but presents additional complexities of its own. Clearly, there is much work to be done in "educating the educators" and others. Even at this early stage it is self-evident that many of the groups, professions, and institutions which might benefit substantially from advanced satellite communications are as yet unaware, not only of the Public Service Satellite Consortium and its goals, but of the whole field of communications satellites.

To many future users, high power communications satellites will represent—initially—"an insurmountable opportunity." The work of the Public Service Satellite Consortium will not be so simple a

matter as asking how many hours each user group will require, how many earth stations should be established, and what price would willingly be paid. For many—likely including those who may someday be the satellite's most enthusiastic users—the process will have to begin with assisting in the identification of those pressing needs which improved communications might help alleviate, plus the iterative and tutorial process of assisting eventual users to relate the opportunities for satellite communications to those issues which are highest on their own agenda.

Even our most preliminary estimates strongly support the hypothesis that a substantial "market" exists among education, health care, and other public service users. As the parameters of that market are more clearly revealed it will be possible for the Public Service Satellite Consortium to address a wide range of vital questions which, at this point, are still moot: Should the Consortium consider obtaining satellite services from present or future domsat carriers or should it look to "an uncommon carrier" entity, dedicated exclusively to public service applications? Should such service be in the presently-used 4 GHz band? The dedicated 2.5 GHz band? In the newly-available 12 GHz spectrum? Would some hybrid system best serve the PSSC's goals and its members' needs? On all these questions, it is too early to tell.

IV. Satellite Working Group

From the formation of the initial steering committee, PSSC leadership has included representatives of the Corporation for Public Broadcasting, the Public Broadcasting Service, and National Public Radio. No small confusion has arisen from the fact that these public broadcasting entities have, with the Ford Foundation, formed another emerging and significant entity, the Satellite Working Group. It is important to make clear that SWG and PSSC are "different"—not "rival"—groups. The focus of the Satellite Working Group is upon the possibilities which communications satellite technology can offer in the near term for the interconnection of public television and public radio stations.

At present, PBS member television stations and NPR radio stations are tied together by the terrestrial facilities of AT&T. Tariff arrangements currently in force will end soon and the public broadcasting community, through the Satellite Working Group, has under careful scrutiny the question of how satellite communications might provide a more flexible and cost-effective means of interconnecting public radio and television stations. That specific question is distinct from the PSSC's more general concerns with the broad spectrum of potential benefits for health care, education,

and public service which might be opened by satellite communications.

The public broadcasters can define their immediate needs quite precisely. There are some 150 public television stations and approximately 170 public radio stations which would need to be served in the near term. With a limited number of reception points and a relative handful of locations from which program origination would take place, currently available domsat systems may offer the prospect of immediate service at attractive costs. ATS-6 and CTS-type systems combining powerful satellites and small aperture earth stations do not begin to demonstrate clearcut superiority in applications linking a relatively limited number of points.

Dialogue and cooperation between the Public Service Satellite Consortium and the Satellite Working Group are the stated goals of both entities. The SWG is addressing itself to public broadcasting's immediate needs and solutions which may be available in the near term. At the same time, CPB, PBS, and NPR continue to support and participate fully in the Public Service Satellite Consortium. Neither group should be thought to be competitive with the other and both continue to seek ways in which present and potential satellite technology can be applied to significant needs.

V. PSSC Members

The initial members of the Public Service Satellite Consortium come from a wide spectrum of health, education, and public broadcasting interests. Some, like the State of Alaska and the Federation of Rocky Mountain States, are ATS-6 veterans. Others, like the Indiana Higher Education Telecommunications System, have had extensive experience in operating complex terrestrial systems. Some are, themselves, consortia: the Joint Council on Educational Telecommunications, the Southern Educational Communications Association, and the Western Interstate Commission on Higher Education.

Since new members are joining the PSSC regularly, it is impossible to provide a complete list. To date, the membership includes the following:

State of Alaska
Los Angeles County Schools
Miami-Dade Community College District
North Dakota Educational Broadcast Council
Joint Council on Educational
Telecommunications
Mississippi Authority for ETV
Southern Educational Communications
Association
Public Television Station KCET, Los Angeles
Corporation for Public Broadcasting
Aspen Program on Communications and
Society

Indiana Higher Education
Telecommunications System
Western Interstate Commission on Higher
Education
University of Southern California
Indiana University Medical Educational
Resources Program
San Diego State University
National Public Radio
American Academy of Orthopaedic Surgeons
Rocky Mountain Corporation for Public
Broadcasting
United Methodist Board of Discipleship
Federation of Rocky Mountain States
Committee on Interinstitutional Cooperation
Stanford University
Medical University of South Carolina

It is anticipated that membership will remain open to all noncommercial agencies and institutions interested in PSSC's goals. To avoid any possibility of conflicts of interest, real or imagined, PSSC membership is not available to commercial entities nor to federal agencies. The Federal Communications Commission, the Office of Telecommunications Policy, NASA, and DHEW have all been most supportive of the Public Service Satellite Consortium. Nonetheless, it has been generally agreed by all parties that it is both prudent and appropriate for the PSSC to maintain an arm's length relationship with both federal agencies and the private sector.

Institutions and organizations interested in PSSC membership can secure additional information from the Joint Council on Educational Telecommunications, 1126 Sixteenth St., N. W. Washington, D.C. 20036.

VI. Conclusion

On July 1, 1975, the Public Service Satellite Consortium received a grant of \$475,000. The award was made by the Office of the Secretary of the Department of Health, Education, and Welfare and the funds came from both DHEW and the National Aeronautics and Space Administration.

The seed money will enable the Consortium to begin the important task of identifying potential uses and users for a new type of satellite service directed at employing the latest available technology to address some of the nation's most pressing needs. The tasks ahead are great but the opportunities are greater still. A temporary headquarters will be established in San Diego and the interim board of directors—which will serve until a full permanent board can be elected at a meeting sometime later this year—is giving highest priority to the search for an executive director. Engineering support for the Consortium's work has been contracted to the Federation of Rocky Mountain States' Satellite Technology Demonstration, and the important work of the Public Service Satellite Consortium is already underway.



Paul F. Merrill recently joined the staff of the University of Mid-America as director of the office of computer planning. Before coming to Nebraska, he was an associate professor of instructional design and development, and research associate with the Center for Educational Design at Florida State University. Prior to his service with Florida State he was the research assistant in Educational Research and Computer-Assisted Instruction at the University of Texas. Mr. Merrill has contributed many professional and technical papers to the field of computer-based education. He is a graduate of Brigham Young University and received his Ph.D. in educational psychology from the University of Texas.

The Role of Computer Technology in an Open Learning Environment

Paul F. Merrill
University of Mid-America

I would like to address the question: "What is the role of computer technology in an open learning environment?" I just recently joined the University of Mid-America, and probably have less experience with open learning than many of you. I have had considerable experience in computer-based education, but that experience has been in traditional institutions, where you can require students to go to a readily accessible learning center to interact with computer-based material. Therefore, I feel that it might be useful to present to you some of my thoughts, and then have you share with each other some of the insights you might have concerning computers and open learning.

I would like to divide my presentation into two different sections. First, I would like to discuss those applications related to the use of a computer in a central location. Second, I would like to contrast the central location

applications with those applications which would make use of terminals at remote sites.

I shall discuss some of the obvious central location applications very briefly, then concentrate on those applications involving remote terminals.

The computer can be of great assistance in handling many of the administrative needs of an open learning system. In addition to the obvious computer applications in the area of personnel records and payroll, the computer can be of considerable assistance in the registration process and in making projections of future student enrollments.

In an open learning environment, where you have students spread over a wide geographic area, the problem of keeping track of each student's progress through a given course is particularly acute. In order to determine the effectiveness of an open learning system, it is necessary to collect a wide variety of data, in addition to student progress data. For example, the research and evaluation group of the University of Mid-America is very interested in analyzing student performance data, student attitude questionnaire data, demographic data, cost data, etc. The storage, retrieval, and analysis of this data presents quite a data management problem. This problem can be alleviated considerably through the use of computer technology.

Administrators and funding agencies often make unanticipated requests for information which would be difficult to obtain from a large data base within a reasonable turn-around time without the aid of a computer. For example, there may be a particular need to determine the number of female students over the age of 35 who finished a given course within a certain period of time. Through the use of an interactive computer-based management system, the answers to such questions could be obtained within a matter of minutes.

Another category of central location computer applications to which I would like to refer is that of computer-managed instruction. One of the first steps toward a computer-managed instructional system is to utilize computer technology in the reading and scoring of objective examinations. This application becomes very important as the number of students increases. The Open University of the United Kingdom refers to these examinations as computer-marked tests. Mark-sense answer sheets have been used in traditional educational institutions for objective examinations for some time. In addition to reading and scoring the examination sheets, the computer may also be used to store the data in computer files for subsequent retrieval and analysis.

A computer management system may also have the capability to store and retrieve non-objective performance data, such as a student's performance on an essay examination, a term paper, a laboratory exercise, an oral or dramatic presentation, or the demonstration of a physical skill. After the collection and storage of this type of data, the computer can be used to generate reports for instructors, course development teams, administrators, and students.

Computer-generated repeatable tests provide an additional approach to computer-managed instruction, using a computer at a central location. With this application, a computer is used to select test items on a stratified random basis from a pool of items which have been previously stored in computer files. A unique test may be printed for each student in the course. The capability makes it possible to use a mastery instructional strategy where a student is allowed to repeat an exam over a given unit if he has performed poorly on his first attempt. It also allows students to proceed at their own pace, and to take a given exam when they are ready, rather than waiting for a scheduled group examination. Objective test items from these computer-generated exams can be graded by the computer, and the scores may be stored for further analysis.

The idea of computer-generated exams can be expanded slightly to include the additional capability of computer diagnosis and prescription. In this application, the computer analyzes the student's scores on various items or scales of the test, and prescribes appropriate remedial learning activities corresponding to the student's specific deficiencies.

The major problem with these computer-managed instruction applications, which use a computer at a central location, is the length of the turn-around time required before the student receives feedback on his performance. I understand that it currently requires approximately 10 days for a student to receive feedback on computer-marked exams in The Open University. I believe that a major challenge before those involved in open learning systems is to significantly reduce that turn-around time.

Up to this point I have described a few of the possible applications of computer technology in an open learning environment where you have access to a computer at a central location. I would now like to turn to those applications of computer technology which would make use of remote terminals.

The availability of remote terminals makes it possible to utilize the computer and its associated

interface devices as an instructional medium. A guest of the Second National Conference on Open Learning and Nontraditional Study has discussed with me a concern shared by many others: Isn't it too expensive to use computers for instruction in an open learning environment? I feel that the answer to that question is both yes and no. The answer obviously depends on the type of application you have in mind, and what you are using as a comparison. If you use the computer merely as an information presentation device, then it's going to be very difficult to justify the cost. There are many other media available that are in much the same situation. For example, in small classes of 20 or 30 students, the use of an instructor as an information presentation device is not very cost-effective either. However, the cost per student is greatly reduced when you put one instructor in front of a class of 250 students, or in front of a packed University of Nebraska football stadium. Obviously, that approach has other inherent problems.

One might argue that a sophisticated tutorial computer lesson would be cost-effective if it were designed to meet the specific needs of every student by branching to the appropriate instructional material based on the student's response history. Although this type of application has been used quite extensively, experience has shown that such computer programs are very difficult, time-consuming, and expensive to develop. I am not arguing that we should completely avoid developing tutorial computer-based materials; however, we should carefully analyze the relationship between the possible increased level of student performance using tutorial programs with that of the corresponding level of increased costs.

I personally feel that we should focus more of our attention on developing computer-based programs which help the student to apply, retain, generalize, and transfer the information he has gained from some less expensive medium. We should use the computer to reinforce and strengthen the information the student has learned by allowing him to interact with the phenomenon in question, by allowing him to practice the appropriate skills, or by providing him problem solving opportunities. Drill and practice, simulation, problem solving, and model building are categories of computer applications which may be used to meet these needs. There are many educational experiences that are very expensive and difficult to present to the student that can be simulated by a computer. Such simulations can give the remote student an opportunity to interact with and manipulate a specific phenomenon under study. Just as television can bring the workings of a factory or

the depths of the ocean within the reach of the student, a computer terminal and interactive computer programs can provide the student with the opportunity to manipulate these environments. He can manipulate the environment of the factory or the environment of the ocean and receive immediate feedback of those manipulations. Such experiences are very difficult to provide without the use of a computer. You can take the student on a field trip to the factory and show him the various manufacturing processes, but the factory superintendent is not going to allow the student to press buttons, push levers, or mix chemicals to determine the corresponding cause-effect relationships. Through the use of a computer simulation, the student can modify certain perimeters and see the effects of those modifications. If the student blows up a computer-simulated factory, then the only real damage that is done is that which is related to the student's ego. If the student kills all the fish in a simulated ocean, he is given an opportunity to go back and correct his errors and try again.

Although computer simulations can be very powerful learning activities in traditional educational institutions, they should be even more powerful in an open learning environment. If you have students studying at a distance, it becomes quite difficult to have them participate in laboratory activities and field trips. Therefore, computer simulations take on an even greater importance for remote learners.

I would like to stop here briefly and give some of you an opportunity to pose questions or respond to some of these issues:

Question: I think it is extremely important to point out that a computer, no matter how exciting and powerful, has appropriate and inappropriate applications. This is particularly true from the standpoint of cost-effectiveness. In an earlier discussion we were talking about the rapid advances being made in computer technology, both in terms of smaller computers and lower prices. Do you see these advances pushing back any of the frontiers that you have talked about this afternoon, so that those applications which are presently non-cost-effective might become cost-effective in the next 10 or 20 years?

Answer: Yes, I think that is definitely the case. The arguments I have presented are based upon the current costs of computer terminals, maintenance, and communications. If we can get the cost of a computer terminal down to that of a television set, then the computer might become one of the least expensive information presentation devices. As the price of computer hardware decreases and the price of paper in-

creases, I could foresee the possibility of its becoming less expensive to obtain information by a computer than by a printed text book.

Question: Do you have any figures concerning the costs per student hour of computer-assisted instruction?

Answer: Yes, most of the cost figures with which I am familiar are based on the experience of those involved with the PLATO project. Don Bitzer argued several years ago that he was going to be able to get the cost of computer-based education down to approximately 50 cents per student hour. That figure was based on being able to connect 4,000 student terminals to one large computer. However, as I understand it, the present configuration will only be able to handle approximately 1,000 terminals. The cost figures based on the 1,000-terminal system seem to be somewhere between one and two dollars per student hour. However, it is difficult to interpret such cost figures because they are based on a large number of assumptions; I think we should also mention that cost figures do not include development costs.

Comment: Another area where computer-aided instruction would be very beneficial in an open learning environment is that of simulated labs and lab practice. Your chemistry and physics laboratories would be almost impossible to reproduce in remote regions or locations. As you mentioned, with the aid of the computer, you can simulate chemistry experiences without having to worry about them being distorted by a dirty bottle.

Let me now turn to another issue. How will we get students who are enrolled in an open learning course to use computer-based instructional materials?

1. We must make terminals readily accessible to the student by placing them in local learning centers or by using mobile units such as is being done at Penn State;
2. the quality of the computer-based materials must be excellent;

3. the computer-based programs must be easy to use;
4. the computer-based materials must offer something which cannot be obtained in other ways; and
5. promotional efforts, such as spot presentations at the end of a video broadcast, must show other typical students doing exciting things on the computer terminal.

Let me conclude by referring to a talk that was given by Max Rowe at an earlier session of this conference.

Mr. Rowe mentioned that he was a little disturbed by the heavy dependence of open learning systems on the use of television. He said that we seem to feel that it is necessary to have one television presentation per week. Are we using television for its unique capabilities, or are we using it because of tradition? In as much as television is very expensive, might there not be other ways that we can do what we are trying to do just as effectively without television. Certainly, Mr. Rowe is not arguing that we should not use television, but he is saying that we should use it more wisely. I think that advice also applies very appropriately to computer applications.

We also need to find some way to integrate our use of television and our use of computers. They have very different types of capabilities. One does not necessarily replace the other. We need to find ways we can use the capabilities of television to maximum effect, and also use the capabilities of the computer to maximum effect. We don't need to use a half-hour television program once a week just because someone else has done so; nor do we need to use a computer terminal just because we have one. We should try to identify those applications which would utilize the capabilities of the various media, and also increase the learning of the student. We need to look at their various capabilities, let those capabilities whet our imagination, and use our creativity to develop applications which would be both effective and exciting to the student.



William F. Atchison is the senior computer scientist at the National Institute of Education. He has assumed the responsibilities of this position on a leave of absence from the University of Maryland Computer Science Department. Dr. Atchison is chairman of the ACM Education Board. He received his doctorate in Mathematics from the University of Illinois.

Computers: The Emerging Technology in Open Learning

**William F. Atchison
National Institute of Education**

I want to give a personal historical view of computer science education and the use of computers and thus point the way toward the potential of computers in open learning, nontraditional learning, and continuing education.

I started in the computer field in 1951 at the University of Illinois when I needed a summer job. The Illiac had just been finished and research work on the computer was getting underway. Illinois had courses in programming, numerical analysis, logical design, and switching theory. There was no such thing as a curriculum in computer science. Most of the emphasis on computers was on the use of computers in research. I was involved in a research study on the structure of rubber molecules. We used the computer to collect statistics on restricted random walks which simulated the structure of the rubber molecule.

The psychology department was a big user of the computer—even bigger than physics at the start. Agriculture got into the act very early in the game and soon, of course, physics was a dominant user. It has been only a few years earlier that the earliest computers went into operation—MARK I at Harvard in 1944 and the ENIAC in 1946 at the University of Pennsylvania.

In 1955 I moved to Georgia Tech, where they were just establishing their computer center. The Univac 1101 there was used mostly for research. They had only a few courses—about the same as at Illinois.

In 1962 I attended an international conference on computers and their applications—IFIP 62 held at Munich, Germany. Louis Fein ran a panel discussion on computer science education. At that meeting the world authorities were trying to decide whether computer science was a separate discipline or not. Some said yes, some said no. Saul Gorn from the University of Pennsylvania, the official U.S. member on the panel, said yes. They were trying to decide what research should be done, what courses taught, and what applications made.

I was greatly impressed by that panel and by the whole conference, particularly by a closing speaker who spoke glowingly about the use of computers linked with satellites for the transmission of information. He pictured Americans being able to obtain information from the National Library in Paris by the use of computers. I think he thought we'd be further along by now than we are, but we are making progress. I read recently that before too many years we should be able to store the entire Library of Congress within the memory of a computer. I'm not sure that the retrieval problems are as close to solution as the storage ones are. In any case, we now have many research efforts in progress on the information storage and retrieval problems. It was at about this time that I was appointed chairman of the curriculum committee on computer science (C³S).

The following summer of 1963 I ran a panel at the ACM meeting, where six persons reported on actual courses being taught in the area of computer science. These courses with critiques were published in 1964. In 1965 our curriculum committee published a preliminary undergraduate program in computer science. It consisted of 16 separate courses.

By this time we had obtained NSF support to pursue the curriculum in computer science. In 1968 we published a complete undergraduate curriculum in computer science which contained 22 separate courses, each outlined in some detail and each containing an annotated bibliography. This

has become known as Curriculum 68, and has been used as a basis of most undergraduate degree programs in computer science in the U.S. and even abroad, and in fact, some M.S. programs. The University of Alexandria in Egypt was already using it in 1969.

Today, there are over 1,000 degree programs in computer science, information science, data processing or other similar title. About one-half of these are A.A. degrees, about one-fourth B.S. or A.B. programs, and the remaining one-fourth are M.S. or Ph.D. programs. Most larger schools, such as the University of Maryland and my alma mater, University of Illinois, now have B.S., M.S., and Ph.D. programs in computer science.

The curriculum committee on computer science is still in existence and is now working on a revision, extension, or modification of Curriculum 68. Since we now have some six or seven years of experience with such programs, practical suggestions can be made and gaps filled in mostly as a function of how the field has developed through the years. Perhaps now we can better answer the question of just how much math is needed, if any.

What I have been discussing and giving you a brief history of is the separate discipline of computer science. It is certainly so regarded today. It must now be considered as a subject alongside math, physics, chemistry, business administration, etc. It provides the basic background for all of computer applications. As research and development in computer science progress, the potential applications will expand.

You heard Sir Walter Perry talk about the Open University in the United Kingdom. In The Open University they have already developed courses in computer science. They are using computers in their work. This includes the use of terminals by students for their homework.

Both the amount of use and the type of use of computers in higher education has changed dramatically over the last few years. In the late 1950's and early 1960's the major users of the computer on the academic side were the researchers with small use by classes. Now, in most major schools, these two roles have reversed. The classroom use for courses has more projects than the research people. This use is coming from almost every discipline. The computer science department usually is not the biggest user.

Even the smaller schools are strongly in the act now. They either have a computer of their own that they can afford or they have terminals serviced by computers located elsewhere. I can easily see how the presence or absence of a computer in a

school can affect the accreditation. Libraries already do, so why not computers. They are essential now.

Another indication of this growth in the use of computers in colleges and universities is shown by the following financial statements I read recently. In 1963 colleges and universities were spending approximately \$1 million dollars a year for computing. Last year the estimated yearly expenditure was around 650 million dollars. It has also been estimated that about two million students will use a computer this year.

As many of you know, the federal government, through HEW, NSF, and others, gave a lot of financial assistance to colleges and universities in their purchase of computers several years ago. In due time, however, OMB essentially said that we can't continue to buy computers for colleges and universities. The bill is getting too big. I can't quarrel with this. There had to be a time when the states, the colleges, and the universities essentially would have to foot the bill on their own. One thing in this connection does concern me, however. I'm afraid that there has been a tendency to say that since computers are so expensive and we have stopped helping purchase them we cannot support anything associated with computers. It would be too expensive. If this kind of reasoning should take hold, it could be a real tragedy relative to the use of computers. They are and can be a tremendous help in the advancement of educational programs. Good projects should be sought out and supported, but of course ultimately justify themselves. There are of course a number of good ones already going on, such as PLATO and TICCIT, which are extensive CAI projects. I think both of these projects, as well as other similar ones, will prove to be of great value to all of education, and perhaps especially to the concern of this conference. Professor Pat

Suppes is now using the computer to package graduate/undergraduate courses so that a professor can handle more courses, even though they may be smaller in size.

Recently, I read that computer costs are decreasing at the rate of about 35 per cent per year, while print costs are continuing to rise each year. If this is indeed true, then in a few years computer information transfer will be less expensive than print technology. This says to me that if we can push our information storage and retrieval research sufficiently fast, we may well change our ways of doing things rather dramatically. This has vast implications for open learning and nontraditional study. We must even now be getting ourselves prepared to utilize this rapidly advancing technology.

Recently I bought a small hand calculator for less than \$150 that does all arithmetic operations, delivers trig function values, hyperbolic function values, inverse functions, exponential function values, and others. It also computes mean, a variance, and a standard deviation, each at the punch of a button, once you have entered your data. I was tempted to buy an equally small programmable hand calculator with 100 memory locations in it and the ability to utilize a series of pre-recorded program cards, each with a 100-word length program on a magnetic card. This is a powerful small piece of equipment for less than \$800.

The point I'm trying to make is that I see no reason why, in a few years, we can't have a computer terminal in our home at a cost no more than our present reasonably good television sets. This means that the classroom can be brought into the home without too much difficulty. I hope that we can see a successful marriage between something like the University of Mid-America and something like the PLATO project.

The Newspaper: A Medium for Open Learning

Martin Chamberlain
University of California, San Diego

How many of us have had the opportunity of knowing that the dissertation on which we have been working so hard in our doctoral program did anything useful for society? I don't, unfortunately, know Jack Everly. I don't even have information as to where he did his work. But in 1970, he reported a study he had done on continuing education instruction via the mass media in which he asked adult educators about their use of mass media. Everly learned, as one would expect, that 85 per cent of those uses involving the media were in television, 7.4 per cent in radio. Magazines and direct mail actually led newspapers, which had only .8 per cent usage. That was reporting what had been done through 1970, presumably.

Shelly Lewis, on our staff at UCSD, had read this, and remarked to me, "Why on earth is it that so little use is made of the newspaper in education?" Then he cited the facts: it is convenient, it is delivered to your home, it stays there, you can cut information out and retain it indefinitely, you can read at your own pace, and you can study at your own time. All these conveniences are things that don't accrue in either television or radio. So why have newspapers been neglected so much?

Well, we decided to try and do something about it, and Shelly actually had the audacity to think that the National Endowment for the Humanities might be interested in supporting the idea. I was dubious of it, but I was certainly willing to let him try. It turned out that they were really delighted to do so; and they have been very generous. We are now about to start our third and fourth newspaper programs, and are actually talking about our seventh and eighth. We will have received 1.5 million dollars of support by the time we get to that point. Those funds have made possible a lot of things which are very necessary when you are breaking ground.

Let me explain what a course by newspaper is as we are doing it at the University of California. There are three target audiences. One of them is the casual newspaper reader, whom you hope you might interest in further education simply because he finds it is not as hard as he expected. Hopefully he will find the course interesting and challenging. So there is a whole new audience out there. In our case, the circulation of the 283 newspapers that carried our first course was somewhere in excess of 20 million, as estimated by the newspapers themselves and added up by us. Then, by a complicated formula, we were able to parlay the actual readership of one article or more to be on the order of 16 million people. And, of course, any time one of us does anything that reaches 16 million people, we really have done something spectacular.

The second level includes those persons who are interested enough to buy study materials. Maybe they only put them on their table to impress their

friends, but hopefully they do look at them, and perhaps work through the course with them. But the credit is of no concern to them. They simply are doing this for the pleasure of it. There were some 12,000 participants on this level in the first course by newspaper.

And then there were the participants that many of us are really trying to reach—those who do enroll for credit. There were 185 colleges and universities offering credit for the course, each in their own way and with their own arrangement. The amount of credit and whatever details they wanted to add to what we suggested was, of course, their own business. There were 4,950 such persons enrolled in that course in these institutions. The course was designed by us at UCSD with the help of the grant we got from the National Endowment, and then presented to the local colleges and universities.

We used the Copley News Service as a means of reaching out to the newspapers in the United States. We used Copley because it was convenient; it happened to be a neighbor of ours in La Jolla. We are not now working with Copley, but with United Press International, which will be servicing the programs this year and in the future, hopefully at no cost to us. The National Newspaper Association, which I gather is mostly weekly and more rural newspapers, will also be used to cover the needs of those newspapers not served by UPI. There's a great value in UPI's involvement because the articles are distributed on computerized tape and it costs nothing for the newspaper to convert the tape to the article in the paper.

The newspapers carry the course without charge. That is the contribution they make, and it is a great contribution when you think of the number of column inches that are in the newspaper each week. We are delighted that newspapers believe such cooperation to be in their interest.

The local college provides a teacher or a coordinator for the course, and we suggested two contact sessions the first time around. We provide examination test banks if the local instructor wants to use them. In some of the other programs we have produced computerized examinations. That is an option available to cooperating institutions.

We believe the independent student sitting out there, working on the course, should have additional readings, and so with each course we create and have published an anthology of additional readings. We produce a study guide that helps the student and serves in place of an instructor. We also have contact sessions for the same purpose. An administrative guide is developed to help the co-

operating institutions understand how to operate the course if they have not done so before.

Two courses have been completed. The first was called *America and the Future of Man*, and the second *In Search of the American Dream*. The first one was about 20 weeks long and the second one was somewhat shorter. In the first course, we used a little different system than we decided to use later. We had a different academic person do each lecture. (What appears in the paper is, in our terminology, a lecture.) There were 18 different lectures in that first series, and as it turned out we felt there was too much discontinuity. The different lecturers really had never talked to each other about the course; each one was simply writing about a subject, so the course didn't have the cohesiveness that a course really ought to have. So in the second go-round we used only four lecturers and we brought them together and had them talk to each other. They mutually determined what they were going to write and how it was going to interrelate, and we believe the course has been much improved as a result. This will be the pattern in the future, as we see it.

The third and fourth courses will be coming out this fall and winter. Dan Aaron, a professor of American Studies at Harvard University, has been the key person in pulling together the teams for these courses, which are a part of the *American Issues Forum*. I hope you are familiar with those words. They represent the bicentennial thrust of the National Endowment for the Humanities. The program will run for 36 weeks, from late August of 1975 until the spring of 1976. Actually the idea for the *American Issues Forum* came from Walter Cronkite, who suggested it to the National Endowment. The National Endowment brought together a distinguished group of people to work with the basic idea and came up with the 36 topics. Dan Aaron did the initial writing, and so was a logical person for us. There are going to be all kinds of efforts associated with the *American Issues Forum* in the United States during the coming year. It will be a national effort to think of the bicentennial, and indeed American history, in these terms through that 36-week period.

The fifth and sixth courses are already being planned. The fifth will be *Oceans: Our Last Frontier* and the sixth *Contemporary Moral Issues: Ethics and a Changing World*. They will be coming out in 1976.

Exxon Foundation has been very generous with us in providing funds for evaluating the first two courses, which has helped a lot to improve successive efforts. We have the evaluation studies, and if you want them we will be glad to send them to you.

As we launched our newspaper program, we discovered that we were reaching a new audience. We were trying to reach an audience that wasn't responsive to the courses we normally offer. That audience was an audience that tended to be more rural than urban, that tended to be more female than male (69 per cent of them were female, which surprised us), and that was non-degree oriented. Most of the enrollees didn't care about getting a degree, they were simply interested in getting some new learning. One of the most poignant letters we received was from a student somewhere in the Midwest who wrote, "All my life I had an ambition to go to Harvard University. Thank you for being Harvard to me." That comment is very important to us.

At about the time the second course was being prepared, we were faced with a serious problem because not only was there a newsprint shortage, but there was a real panic among newspapers because of the rising costs. We were very concerned as to whether we would be able to get any newspapers to cooperate, particularly if they didn't feel that the first results were all that good. We are not used to working with each other. Newspapers and institutions of higher education tend to be at arm's length most of the time. As a result, it doesn't occur to the university people who are using the courses to say to the newspaper editors, "Gee, that was a great thing you did for us; we registered all these people," or "We did poorly, as you know, something was very wrong." But there is a little feedback to the editors, and as a result, the editors may not think the participation was worthwhile. They may assume the effort was a failure, and not want to do it again. So, one of the things I would urge those of you using newspapers to do is to stay in touch; to tell your editor what happened and help analyze why.

We learned through the first course that success was largely determined by what the newspaper

itself did. It was much more important that the newspaper give some special attention to publicizing the course than for the institution itself to publicize it in its usual way, although, of course, that is terribly important. If the "lecture" is identifiable in the paper—if you flip through the paper and suddenly it stands out because you see a special head, or box, or illustration that stops your movement through the paper, that's important. And where papers did things like that—where they introduced the course by telling the readers it was coming—the readership was very good and the number of enrollments was high. As I recall, the University of Hawaii and the Honolulu Star Bulletin, in the first course, had over 600 registrants. That happened because the Star Bulletin really did do a lot to get their readers' attention. Of course, it was rewarding to them. They had a readership.

In the second Course by Newspaper, the actual readership was higher than in the first course, except for Boston, where the number of subscribers who read the "lecture" was 10 per cent. A town in South Dakota reported 28 per cent, and New Canaan, Connecticut, had 41 percent. That is a very good readership. St. Paul was 28 per cent; San Diego, 23 per cent; Shreveport, Louisiana, 21 per cent. Those were slightly higher than comparable figures for the first course.

In conclusion, we have learned a lot. We think now we're going to be in business long enough that we can discuss future plans with confidence, and hopefully we will be working together much more harmoniously than in our first efforts. Our new director is a newspaper man as well as an academic person, and is able to bridge this gap successfully. We are looking forward to continuing good relationships with the 190 institutions that have been working with us, and hopefully we are going to be recruiting a lot more.



G. Woodson Howe is administrative assistant to the president of the *Omaha World Herald*. In this capacity, Mr. Howe was instrumental in the paper's commitment to the University of Mid-America to develop newspaper course components that were distributed statewide by the paper as part of the State University of Nebraska delivery system.

The Newspaper: A Medium for Learning

**G. Woodson Howe
Omaha World-Herald**

The story of the partnership of the Omaha World-Herald and the State University of Nebraska (SUN), and later the University of Mid-America, begins several years ago in 1972. The World-Herald had been watching with interest the proposed course by newspaper project being planned by the University of California at San Diego.

We were interested for several reasons. One was our concern that rising costs might force an increasing number of people to skip an education at a traditional campus. We wanted to be part of the search for cheaper post-secondary education. Our function doesn't cease with collecting and transmitting information. Newspapers have long felt that we have an obligation also to offer comprehension of what it all means. Another reason for our interest was our belief that newspapers have certain advantages over television as educational tools. Martin ticked off some of these: newspapers can

be retained indefinitely, newspapers can be read by the student at his own speed, and reading is still as good a way to learn as watching a filmed lecture. We in the newspaper business naturally don't want people to get out of the reading habit. Just a little bit of self-interest in our involvement. Still another reason was our feeling that by carrying deeper material we would be establishing good public relations with some of our more highly educated readers, a few of whom tend to tend to look down on the content of newspapers. Lessons in the newspapers might also make newspapers more important among the less well-educated, highly-motivated readers who look on education as a means of escaping their environment.

In 1971 and 1972, the University of Nebraska was studying the use of educational television to deal with the problem that a fairly sizable segment of the population was not taking advantage of on-campus programs. I don't know who initiated it, but in any event, Harold Andersen, our president, and D. B. Varner, the University of Nebraska president, discussed it at considerable length over the summer of 1972 and into the fall. In February of 1973, after several months of these discussions, we agreed to join in with SUN in a pilot program. This was our agreement: We would set type and provide space for a lesson a week for each course that was offered during the demonstration phase. There would be no charge to the University. We asked in return merely that we be the only Nebraska newspaper allowed to carry the courses during the experimental phase. The plan was to start the first SUN courses in January of 1974. Since that beginning date would overlap the first University of California course, the Nebraska people asked us not to join the USCD project. So we agreed to postpone our negotiations which were then in progress with the San Diego people.

In the spring of 1973, we helped to develop prototype SUN pages which could be used by the University in its grant application.

Some of the typographical ideas that emerged then remain our guidelines today. Among them is the suggestion that the headlines be catchy in order to attract the casual reader, and perhaps get him interested in taking a course. Each lesson should have at least one illustration - be it a photograph, graph, drawing, or something in a graphic way. A SUN logotype should be designed and included in each lesson for identification. Both partners agree that the location in the newspaper, if possible, should be unchanged from week to week.

We received the University's assurance that students would be encouraged to use all three major elements: educational television, learning centers,

and the newspaper courses. "These are equal partners," D. B. Varner said. "These are the big three." We suggested that the writing be as lively as possible, and the University thought the courses must be academically sound but journalistically attractive and interesting.

The experiment would have been disappointing from the World-Herald's standpoint if the only people who read these lessons were the persons who enrolled, a number which the University predicted would be no more than 5,000. The newspaper lessons for the first two courses, Accounting and Psychology, were written by a moonlighting member of our staff who was paid by the University, and we don't know what those terms are. We merely gave the University a list of four or five experienced staff members whom we thought might do a good job, and the University contracted with them.

Questions regarding the day of publication got our attention next. We are a statewide newspaper with a daily circulation of 248,000, and a Sunday circulation of 282,000. The paper is delivered to 41 per cent of all the homes in Nebraska and Southwest Iowa daily, and to 47 per cent of the households in our circulation on Sunday. There was a temptation to publish the lessons on the days of television broadcasts, which are Monday, Tuesday, Thursday, and Saturday. The stronger temptation, however, was the larger audience on Sunday, an additional 34,000 households, and then the choice of positions became easy. Our tabloid-format entertainment magazine, due to the nature of its content, which includes weekly television listings, movies, and, in fact, all the arts, including book reviews, travel, music, drama, etc., is kept around the house for at least a few days or often the entire week. So this became the newspaper home for Accounting I and Introductory Psychology.

The courses attracted 624 students. The accounting enrollment was 410, and psychology was 270. The total is more than 624 because 56 persons registered for both courses. Eighty-five per cent of those who enrolled were older than 24; the average age was 41. In accounting, three-fourths of the students were women. In psychology, 85 per cent of the students were women. Half of the students had no previous college credit. At the conclusion of the first two courses, students were polled as to whether the newspaper component had been helpful. Of the students responding to the SUN staff survey, 90 per cent said that the newspaper lessons were very helpful or helpful. Obviously, editors like to hear things like that.

We were pleased, but we wondered how much readership the SUN lessons had beyond these 624 persons. The following comments from coordinators of the learning centers provided some hints.

From Scottsbluff: "Frequent comments are heard from people not enrolled in SUN courses who say they save the newspaper and then read it in conjunction with the TV segment. There is also an element of pride implied in some of their comments, since many friends and neighbors see what they are doing through SUN and see that it is significant enough to have the World-Herald associated with it. Perhaps the biggest compliment to the World-Herald comes from sister newspapers locally who openly admit that they would have liked to have had the opportunity to carry the courses in their newspapers. Brevity, preservability, and visibility are the main plus-factors." From the learning center coordinator at Kearney: "We have found that many people who are not enrolled in the course read the newspaper segment as a matter of Sunday morning routine and enjoy it very much. These people range from instructors who read the article out of professional curiosity to students who use it as an outline for brushing up on past courses. Several people who expressed an interest in enrolling in SUN next semester were stimulated to do so as a result of following the Sunday newspaper lesson and finding it interesting."

In March, 1975, SUN offered two new courses and a repeat of Accounting I and Psychology. One was Introduction to Computers, a course that we thought would have broad appeal. The other new course was called "The Consumer Experience." In the atmosphere of double-digit inflation and with all the recent emphasis on product safety and purity, we thought that this course would have an even wider appeal. Unfortunately, the new courses enrolled just 148 persons—split about half and half between computers and consumerism. The repeated accounting and psychology courses outdrew the new courses, which the editors in their wisdom thought would be so appealing. The total March enrollment of 358 was a disappointment for the SUN staff, and I am sure it was to the World-Herald. SUN personnel blamed the low enrollment on the fact that the spring courses would not be finished until July, thus interfering with some family vacations. Another reason was the worsening economy in the spring, which forced many persons to tighten their belt. The cost of enrolling for credit can range from \$56 to \$73. In addition, students should have audio cassette tape players. If you don't already subscribe to the World-Herald that would cost you \$6 for 15 Sundays. So, concerned over this shrinking enrollment, the newspaper added a SUN question to its spring 1975 public opinion poll. A total of 525 persons across the state, including 287 World-Herald subscribers, were asked, "How many SUN lessons currently offered in the World-Herald entertainment magazine have you read?" Nine percent answered that they had read all or most of the

currently offered lessons. Thirty-eight per cent said that they had read the SUN lessons at least some of the time. That means that at least 26,000 persons were reading SUN all or most of the time, and another 82,000 were reading the lessons some of the time. Our survey found more readership in outstate Nebraska, where 42 per cent of the subscribers indicated that they were reading at least some of the lessons, than readership in Omaha, where 34 per cent said that they were reading some. We found as many men as women were reading the SUN lessons, but not as many men as women were enrolled as students. In terms of age, the heaviest readership—46 per cent—was among people over 60. The lightest—33 percent—was in the under 30 group. So now we have evidence, although limited, that this precious newsprint isn't being wasted.

Where does the partnership go next? We believe the benefits to both the University of Mid-America and SUN are substantial. The space in our newspaper alone is of some consequence. If the space used by SUN in 1974-75 had been purchased at the most favorable retail advertising rate, its cost would have been about \$50,000. Space was not all that SUN received from the partnership; it also received publicity. On the cover of each Sunday entertainment magazine runs a little banner calling attention to the special SUN pages inside. Occasionally in this position we will give the page number, unless it is in its usual anchor position, which is usually in the centerfold of the entertainment magazine. Occasionally, due to the way presses are made up and the size of the magazine, we cannot put it in that position. If the lesson is not in its usual place, we will usually give the readers an index, telling where it can be found. The continuous presence of the lessons in the magazine, we believe, can't help but increase the name recognition of this experiment. Furthermore, the World-Herald has a reputation of being solid and reliable, and the fact that it sees fit to run these lessons may have some intangible benefits.

This is not to minimize the benefits to the newspaper. As a mass medium, we would like everything on our pages to appeal to all readers, but the fact is the newspaper is a collection of vastly different materials appealing to different tastes and interests and a large collection of minorities. If we can find quality features that are regarded as interesting and significant by 15 to 20 per cent of our readership, we'll consider keeping them. Barring newsprint shortages or even more rapidly increasing publishing costs, the World-Herald continues to be interested in the university without walls. How deeply we become involved in the next phase will depend on the University's ability to come up with interesting subjects told in an interesting manner.



Robert Wedgeworth, Jr., is executive director of the American Library Association. He is the former editor of *Library Resources and Technical Services*, the official journal of the ALA Resources and Technical Services Division. Mr. Wedgeworth has held library positions in both public and academic libraries and in cataloging as well as acquisitions work. He is a member of the American Society for Information Science as well as ALA. Articles by Mr. Wedgeworth on a variety of subjects have appeared in *Library Journal*, *Wilson Library Bulletin*, and various ALA publications.

Libraries and Nontraditional Study

**Robert Wedgeworth
American Library Association**

Since the public library, as we know it, is the oldest tax-supported agency in this country, having as its primary purpose the provision of informal educational opportunities, it is quite logical for us to accept its long and intimate involvement in adult education. This involvement, however, has been largely supportive, with occasional bursts of leadership. I would like to sketch for you, briefly, the role of libraries in adult education, point out some of the problems and issues, and then take a specific look at the programs that I have mentioned.

In terms of the educational objectives of libraries, they developed within 50 years of the advent of the public library in this country. For those of you who are unfamiliar with library history, we spent the years up until that time experimenting with a variety of forms of libraries: many of them subscription libraries, of which there are still a few around, many of them mercantile

mechanics institutes established for workers who still want them on a subscription basis. Some more substantial institutions were called proprietary libraries. These libraries charged substantially higher fees, and some of them were under the sponsorship of a religious organization. These various forms of public libraries developed, flourished briefly and went out of existence until 1852. In the history of the public library movement, this was a landmark year because it is the year in which the city of Boston established its public library. It established it with a very eloquent statement, which is quoted quite frequently even today as having outlined the primary purpose and objectives for a public library. Briefly, this report sees the educational role of the Boston public library primarily as a supportive role to the city schools. It says that:

The city, as far as possible, will make this library the crowning glory of Boston's system of city schools. Or, in other words, this institution will be fitted to continue to increase the best effects of that educational system by opening to all the means of self culture through books for which these schools have been specially qualifying them.

There was no doubt that the trustees of the Boston Public Library in 1856 saw the Boston Library in a role supplementary to the city school system. I think that it is very easy to understand that particular role; since at that time education was considered somewhat synonymous with book learning. Since libraries house books, the library became an educational institution. The principle function at that time, of course, was the collection and preservation of knowledge. Therefore, libraries were popularly known as storehouses of knowledge.

Other libraries were soon founded by cities in various parts of the country, but the major boost in strengthening the educational role of the public libraries was the founding of the American Library Association in 1876. As one prominent librarian, William Howard Brett of the Cleveland Public Library, was to remark in 1897, very few important advances were made in the interim which had not been first discussed either at an ALA meeting or in the pages in the *Library Journal*, then the official journal of the association. These collective professional efforts enhance the development of the public library as an institution.

The public library as an institution was originally developed not through the popular demand of the people, but primarily through the leadership of local civic leaders, philanthropic and private support being its primary means of gaining funds. This lacked continuity. The Boston Public Library established a new pattern by creating a tax-supported institution. By the turn of the century, the public library had developed in full flower much

the same as what we see today. The characteristics of the public library at that time would have been a central library building housing its principle staff members, with the principal function of acquiring, organizing, and circulating various materials providing some reader services in the form of reference and informational service. Some libraries were beginning to provide some reader advisory service in order to enhance their goal of self culture and personal development. Many of the services which we now know are outgrowths of what that prototype library provided. Services to children were extended shortly thereafter; some had started prior to the turn of the century, but did not catch on until the 20th century. Rural services extended the services of the central public library into the suburbs, not into the rural areas as we know them. That came much later.

The Carnegie Library expansion was a significant addition to this particular developmental phase of libraries, because it provided more central library buildings and brought on new objectives. These new objectives were education, recreation, democratization, and reform. I emphasize these because two of them are primary objectives and two are temporal. Education and recreation have continued up to the two primary objectives of public library. In various periods, libraries have been involved in democratization. Most prominently during the two major world wars, and during the periods when we had large groups of immigrants coming in, libraries developed basic educational programs outside the auspices of the public schools. Reform was primarily associated with religious and moral movements, and needs no further explanation. However, the two basic objectives, education and recreation, have always been in conflict. The reason for this is that the function in carrying out the objectives of the libraries on a spectrum can be considered as:

1. to collect and preserve and circulate books;
2. to make books and other materials accessible;
3. to cooperate with and supplement the work of other adult education agencies;
4. to provide educational services within means quite vague (It means that you can do all of the above);
5. to become a major adult education agency, providing those kinds of guidance and teaching skills that you normally expect in an adult education agency.

On the spectrum, there was a minority on one end who said that the function of the library is to

collect, preserve, and circulate books, and on the other end there was a group of librarians, equally active, saying that the public library should be an adult education agency.

The next major break was in 1956. We still have the same objective, but two things happened in 1956: the American Library Association formulated its first public library goals statement, and Congress passed the library services act, creating or making federal funds available to extend public library services to large numbers of rural persons. Those two events, first of all, stated the objectives of public library services and second created some means for achieving them. Now, the ALA interests have been within this movement all along. But most recently, in 1972, the American Library Association published a statement called a Strategy for Public Library Change, which proposed a public library goals and feasibility study. In this statement, we said that there are four major groups of areas for recommendation:

1. to achieve a better understanding of the role of the public library in the community;
2. to advocate a broad program of research;
3. to promote experiments and demonstration programs;
4. to provide continuing education opportunities for librarians' pursuit of the new goals of the public library.

Presently, we can see a convergence of the educational system which, in a sense, removes some of the major constraints to the public library as an adult education agency. These constraints included little funds, few staff members, and very little pub-

lic visibility. What has happened is that we have had the growing popularity of independent learning, we have had the discrediting of the concept of the local library as a self-sufficient agency, and we have had the recognition on the part of local, state, and federal governments that there are many educational services being duplicated by the schools, by community colleges, four-year colleges, universities, and external degree programs, all of which require the commitment of funds to separate agencies. Finally, we also have had the growing trend to accommodate the personal needs of students; the need not to travel away from home; the need to study while having a full-time job; and others. The convergence of these developments in the educational system have come closer to what we consider the realistic capabilities of the public library. If we project this into the future, we can see what Hal Gores of the Educational Facilities Lab means when he says that in the 1980's higher education will consist mostly of libraries and living rooms.

We are presently at the point of announcing a major national program to create a national library system in this country. This is the first time that we will have a delivery system for information programs spread across the nation which would tie all of the local libraries together with the major federal and academic libraries. We have, since 1956, experimented and demonstrated with various ways of delivering information in library service programs, so that we have, in a sense, created the foundation for information diversity by design. The opportunities for public libraries have never been greater, for now the realistic realization of some of the public library goals are within our grasp.

Libraries and Nontraditional Study

**Jose Orlando Toro
College Entrance and Examination Board**

The Office of Library Independent and Study and Guidance Projects has been working with public libraries in nine cities to test Learner's Advisory Service. Results show that the Service, designed to help the adult independent learner, is successful. The nine libraries participating in this project are the Atlantic Public Libraries, Denver Public Library, Felix Prep Library in Baltimore, Portland (Maine) Public Library, Salt Lake City Library, St. Louis Public Library, Tulsa City County Library, and the Free Public Library at Woodbridge, New Jersey. There have been some other agencies cooperating in this project, and funds have come from the National Endowment for the Humanities, the Council on Library Resources, and the U.S. Office of Education. The College Entrance Examination Board has been working as the fiscal agent for the project, and has led the cooperating effort.

The Learner's Advisory Service itself was planned and developed over a period of two years, and encompassed the training of the librarians who were to provide the Service and the development of the evaluation data that would tell us how effectively the Service was implemented. Between August, 1974, and January, 1975, the libraries in the project launched their pilot test. As of January, 1975, libraries have gone into an expanded phase, operating on a larger scale in a program of service with the modifications that were dictated by the pilot test.

The general goals of this national effort mainly have been to help adult learners to become self-directed in their learning, and to assist the libraries to plan and bring about comprehensive, intense, and in-depth advisory and information support services that would allow them to function as community learning centers for the adult self-directed learner. In testing the specific service, we attempted to discover the feasibility of examining and offering this comprehensive and intensive advisory service to the adult independent learner through the public library. This purpose focuses on two issues: Can adult learners and their learning need be identified and described by the library's services, and will the service proposed by the library adequately meet these specified needs? The second purpose of the pilot testing was to develop a set of procedures for working with the learner, and for effectively and efficiently linking the learning needs to a responsive service. The Learner's Advisory Service (And that is singular, because we want to keep the emphasis on the fact that the service is a one-to-one service.) has emerged in the light of the demonstration projects, characterized by a planning process and a continuous relationship between the librarian and a serious independent adult learner over a sustained period of time. This is

different from the traditional service of reference, where we tend to imagine a one-contact type of service. It is an advisory facilitating relationship which is coupled with the information support services of a large library.

There are two advisory components to be considered—information support services that have traditionally existed in the library, and which we have tried to reprogram, and the advisory function itself. The advisory function is composed of two parts, the diagnosis of a learning need and the development of a learning plan. In diagnosing the learning need, the advisor and the learner work closely together in describing what the learner wants to accomplish, what the learner already knows, and how the learner prefers to learn. The learner and the advisor work to develop a shared understanding of the various aspects of this learning need, and this includes the learner's goal. Try to get a good idea of whether it's job advancement or academic credit, or perhaps it's for pleasure or personal self-development. This is an area of the project which has caused us some difficulty, because the librarian tended to identify in the initial projects the content of the learning project as the goal. But, in addition to the goal, the librarian must also develop a shared understanding of the content of the learner's areas of interest. Which can be the desire to study a foreign language, a creative writing project prompted by the need to provide a magazine article for a local magazine, the study of a historical period, or just the need to make some sort of home repair. Now that gives you some sense of the various learning projects that can be carried by way of the Learner's Advisory Service. It is important, also, that the librarian and the learner develop a shared understanding of the learner's background in this area of interest to get a feeling of an assessment. Not that there is any formal testing in this thing, it is simply a question of the librarian's and the learner's coming to an understanding as to just where the learner is in the area that he wants.

Basically, the people who are being serviced are:

1. people who presently are not receiving any help from anyone, or
2. people who don't want to be assisted anymore by a traditional learning institution.

The Learner's Advisory Service accepts a broader concept of adult education than is normally found in this traditional program. Besides college by examination, it attempts to assess the adult and the various needs adults face in assuming adult roles. So any learning need that is identified by the adult is a legitimate and valid learning experience to be assisted in the public library. I think that these last statements are important to make it clear that

stitution, where the pattern is one of providing a textbook, a class, a teacher, so the requirement and the controls are all under that institution. The librarians' role in that set-up is to function in support of those controls.

When you talk about the adult self-directed learner, emphasis should be placed upon providing a service that meets the needs of that individual. That individual is going to select his own learning goals and follow his own desire as to how he is going to proceed. He is going to come into the library without a clearly perceived idea of what he wants to do. Which is more-or-less the experience that is as new to the librarian as a person coming in and saying "I have a learning need and I want it shaped so that I can deal with it." This particular learner is not affiliated with a learning institution, and is in need of planning help. He is in need of having his experiences structured.

It is assumed that this learner lacks the support needed to venture out on his own and sustain a continuous learning experience. We define this learner, this self-directed learner, as one who assumes responsibility for his own learning. Which means he has the freedom to decide how his learning need will be fulfilled, in terms of content, method, etc. He affiliates with the library to determine his course so the library becomes the primary learning institution for the projects in which he is venturing. Therefore, this becomes the agency to which he is going to turn. His affiliation with the library is, therefore, identified by those three services listed previously: the diagnosis of the learning need to delineate the learning goal, the development of the learning plan as a result of this diagnosis, and selection of the resources to link up with the learning plan. He is affiliating with the library to receive those services. The scope of his project is not in any way determined by the library or by an institution.

The learner's advisory service accepts a broader concept of adult education than is normally found in this traditional program. Besides college by examination, it attempts to assess the adult and the various needs adults face in assuming adult roles. So any learning need that is identified by the adult is a legitimate and valid learning experience to be assisted in the public library. I think that these last statements are important to make it clear that learning services do not put the public library in competition with the traditional teaching institutions. We are assuming that, in making an affiliation with the library, the learner has decided that he does not want to be in a place where he has to come at a specific time, at a specific place, and follow a predetermined method. But if he does, then, during the diagnosis of the learning need, during the initial interaction with the learner, it is the re-

sponsibility of the librarian to bring to that learner's attention all the various ways in which he can carry it out in groups and with local institutions. So, if it is best to refer an individual immediately to a college, then that is exactly what the librarian will do. This usually follows a good interaction with the learner, where the librarian feels indeed that this person would rather be with a group and the best place to provide this would be in a traditional institution.

The librarian must also develop an understanding of the learning methods preferred by the learner. In other words, does he work better with books? Or is it best to develop a program that depends on films? Or do we mix books with films and cassettes or records? Finally, the learning location preferred by the learner should be an understanding that is reached between the two so that problems that may come up as to accessibility of sights to the learner can be avoided. Is this going to be done at a work site? This shared understanding forms the basis for the learning plan, which the learner works out with the librarian. The learning plan is the vehicle which more-or-less details how the learner will get from where he is now to where he wants to go. The first step in developing the plan is the specification of approaches which match the need and the learning style of the learner. One approach might be to rely totally on print materials, another approach might be to recommend a variety of media, and a third approach might be to involve mixing library materials with referrals to community organizations.

The second step in developing the learning plan is the specification of a learning sequence. The requirement here is to determine where the learner should start and how the learner should progress through the project. The specific issues that arise in this involve the type of materials that the learner is going to be provided, the level of sophistication

of this material, the volume of material provided at any one time, and various other considerations which might in some way facilitate or impede the learning. Those two components which exact most of the learning needs and develop the learning plan provide the advisory component, and this, basically, is something new in the public library. The other part of the service, that is the information support services, has existed in some libraries. Our project has not tried to guide the organization and the provision of the information support services in different forms, which will be described by Hank Shearouse. This aspect of the learner's advisory service provides mainly a collection of learning resources to assist in that learning process.

We are looking at information support services that also provide referral within the library - where one department is able to link up with departments throughout the library and can connect a learner to areas of expertise that the specific individual serving as the learner's advisor may not have. In some libraries, such as in Tulsa, this is accomplished by doing a survey of the competencies and talents of the librarians and keeping this on file so they know to what particular librarian people interested in specific areas should be referred.

Finally, in terms of the information support system, a person can be referred to a learning event, or a learning event can be organized in the library itself. The self-directed learner who is on his own and has no affiliation with an institution might want to socialize and share his learning experiences with others. In this case, the library may organize discussion groups, field trips, anything that will give this person another experience beyond his being alone with himself. Who is this self-directed learner that we are talking about? This is important, because I think universities, colleges, those who were involved in adult education should understand that the library is not in competition with them at all.



Libraries and Nontraditional Study

**Henry Shearouse, Jr.
Denver Public Library**

First, let me set the stage. Denver Public Library is the library agency which serves the city of Denver, which consists of just over one-half million people. The main library is also the reference or source agency for the metropolitan area of about 1½ million people, living in eight counties. The library system for the city consists of the main library, 20 branch libraries, and four mobile units. The collection now numbers over 1½ million books and almost 1½ million documents and periodicals. In 1974, the system loaned some three million items for home use...Books, pamphlets, government documents, sixteen millimeter and eight millimeter films, framed pictures, reproductions of sculpture, and audio and video cassettes. And we loaned these to almost 290,000 persons, 65 per cent of whom are adults. We also answered 1,081,000 requests for information. As you can see, the public library in Denver is a rather busy place.

Denver Public Library (DPL) was established in 1889 and its first librarian believed very strongly in adult education as one of the functions of the library. In fact, he stressed this in his handbook for library staff members. In 1930, Malcolm Glen Winer, then librarian, was instrumental in establishing the adult education council under the auspices of the library, the Denver Public Schools, the University of Denver, and the University of Colorado. The Adult Education Council is a coordinating agency for public and private groups concerned with adult education. It publishes *Educational Opportunities*, a list of adult credit and non-credit courses and educational centers. About 5,000 of these are published three times a year. As a result of studying diversity by design, the Adult Education Council has begun to assess needs in areas of nontraditional study, and to work with its 100 member agencies to plan and develop ways to meet these needs. The Denver Public Library has functioned as an information center for the city since its inception. We are now expanding this traditional print-oriented service to include community agencies and individuals who have special expertise, and are willing to share it. We have long provided publications and films and lecture programs to guide people in their reading and learning projects. The combination series of program and reading lists on mental retardation and a series of films on social problems, entitled *Have We Got Views For You*, shown in cooperation with Metropolitan State College and Community College in Denver, are two examples of our efforts to supplement formal education and facilitate informal self education. In addition, we publish a large number of book lists of various kinds, some in cooperation with the museums.

We have expressed the self education goal of the library in these terms: to help the individual in the process of identifying, in discrete terms, the objective he seeks, and to provide materials, books, tapes, films, and experts in the community which will enable him to meet his objective most efficiently. The DPL program to meet this goal is called *On Your Own* (OYO). This program was developed by the library through the cooperation of the Adult Education Council, which is comprised of representatives of the West Interstate Commission on Higher Education and eight colleges and universities in the metro area.

The OYO program actually began in 1973. It is composed of seven activities, six of which are packaged programs to help a person at a particular skill or interest level. The other program is the one that Orlando described as taking the person where

he is and designing a learning plan to fit his own individual needs. The packaged programs are:

- CLEP;
- The General Education Development Test (GED);
- Great Books*, which is the study and discussion of the great books of the world, and its various off-shoots, including *Junior Great Books* and a program we developed in Denver; *Contemporary Books*.
- Right to Read*, which is a tutorial method of teaching reading skills and English as a second language;
- SURGE, which is State University Resources in Graduate Education from Colorado State University, with video taped courses in Business and Engineering;
- Time Alive*, which is a DPL-developed multimedia program in the Humanities involving reading, listening, and looking, which coordinates the library, the museums in the city and other cultural agencies, and the libraries of the self-directed program, which is the individually designed learning plan.

What does the librarian use to help the person who comes to the library? We operate as an organizer and an assistant in decision making, and also as a reinforcer. The organizer function is the interview process in which we help the adult define his project, narrow the scope of the project so that it is manageable, and assess his own skill level. The decision making component is concerned with helping the learner decide how he wishes to go about learning: class, tutor, or on his own. How he wishes to learn or how he learns best.

The reinforcing role of the librarian is concerned with checking to see if additional materials are needed, or if a change in direction or a way of learning is needed, and encouraging the learner in his project.

Often, the librarian's most rewarding contact with the learner is his report of success in achieving his goal. Passing the CLEP examination, building his own boat, understanding the chemical or mathematical formula, or something such as that.

During the first year of *On Your Own*, we provided information and referral on CLEP to 1,500 persons. Bibliographies were prepared and made available on all CLEP examinations, and inquiries were referred to specific people in area colleges who could serve as counselors and who gave the test.

We have also now sold about 1,200 copies of the *Time Alive* synchronism at 10 cents each, and distributed over 13,000 free book-marks, which contain much of the listing of materials but do not contain the actual materials themselves. Each of the *Time Alive* synchronisms is made up of study guides in the particular area and a list of materials, including books which will relate to that particular era and to groups of materials which can be seen at the Denver Art Museum or at the Museum of Natural History, in addition to recordings of music, poetry, films, and other kinds of audio-visual aides which are available in the library collection. We have published 20 different synchronisms, and have a goal of 68 in all. They are being used both by individuals and by groups of adults, as well as by the schools.

During 1974, we also worked with over 600 students and 175 tutors in the *Right to Read* project.

In February, 1975, we initiated the self-directed learning component. From February 15 to May 30, the librarians in the system logged 458 participants in the self-directed learning area. Learning projects have included general education, personal development, job preparation, and do-it-yourself activities. The average length of time for each con-

tact with the learner has been about 30 minutes. Some librarians have spent several hours in locating materials, and in following up the initial interview. There are times when we cannot handle such a period of time immediately, and we may suggest an appointment for further discussion..

In response to requests from the public and the library staff, we have been experimenting in providing educational counseling in conjunction with the University Without Walls and the Educational Opportunity Center, a federally funded agency. A qualified counselor has been made available one night per week for three hours each night. During the first 10 weeks, 10 people were counseled, most of them requiring a good bit of time beyond the initial contact in the library.

At Denver Public Library, we see the library's role as that of providing information about the kinds of educational activities which are available, helping the learner to use the one most applicable to him, and supporting his efforts in achieving his learning goals. The *On Your Own* program gives flexibility in providing several alternatives for adults interested in learning outside the classroom. Literally on their own.



Martin N. Chamberlain is the assistant chancellor for extended studies at the University of California, San Diego. He has been with that institution since 1966, when he began as dean of university extension, a post he still holds. Prior to his joining the staff at UCSD, Dr. Chamberlain was the director of the Peace Corps in Tanzania, East Africa. He has also served as director of continuing education at the University of Washington in Seattle. A native of Calgary, Canada, Chamberlain has traveled extensively in Europe, the Middle East, the Far East, and Africa, and on occasion as leader of study tours. He was twice member of U.S. State Department delegations to Germany and to India.

Ascent of Man—A Course of Study

**Martin Chamberlain
University of California, San Diego**

I intend to discuss what seems to be the significance of what we've been through, and where we might be going, with regard to such projects as *The Ascent of Man*. May I start with an anecdote about how we got into this activity. It happened at a dinner party at my home for Richard Holme, who was then vice-president of CRM Books and was about to return to England. We had invited the people Richard wanted to have and among them were the Jacob Bronowskis. Bronowski lived in La Jolla, as we do. We knew one another and we got to talking a little bit about what happened in Britain when *The Ascent of Man* was shown there. As Richard was leaving, he said, "If you've got any brains, you will get *The Ascent of Man* in this country and do something with it."

I happened to see Bronowski at a cocktail party about two weeks later, and I said, "Richard thinks we ought to do something with *The Ascent of Man*. How do you feel about it?"

He said, "Let me think about it." Shortly he called me back and said, "Let's do something."

And so we did. One never knows when a good idea is going to come along. The significance here is to both recognize and be ready to act on it when it happens. Still, chance plays a large part. If I hadn't met Bronowski shortly after having been told about his project probably nothing would have been done.

So, we started negotiating with Time-Life in New York, and, as Dick Kelly stated, there was not very much response on their part. The negotiations went on for quite some time. Finally we turned to Little-Brown, a publishing subsidiary of Time-Life which had produced the Bronowski book, *The Ascent of Man*. An interesting fact emerged—both from our negotiations with Time-Life and Little-Brown and Company. Both said if they were going to work with one institution, they would select Miami-Dade over the University of California for the sound reason there are so many more community colleges than there are four-year colleges apt to be interested in this sort of course. So, perhaps that's a good place to start with significance: the value of the community college market. In any case, our efforts to work with Time-Life delayed the project by several months. When we finally did get to Little-Brown, things started happening very fast and very effectively. It's been a pleasure to work with them as with Miami-Dade and all others that participated in this enormous project.

The success of the project speaks for itself. But what can it say to us? Well, I would suggest a number of things, perhaps the greatest of which is the new acceptance of public television. Through such programs as *The Ascent of Man*, *Upstairs*, *Downstairs*, and a few of the other programs of this sort that have been very widely received, commercial television is being challenged in the Nielsen ratings, in prime time, at least on occasion, by public television. This is of great significance to us. Most of the successes have been BBC imports, but their success has led our own government, and in one instance probably foundation money, to support the development of our own programs. A new acceptance of public television opens a channel for us to reach an audience that we didn't have before. And we're certainly grateful for the cooperation we get from public broadcasters and the PBS.

Another significant development was the notion that television designed for entertainment purposes could be used for education. It hadn't occurred to BBC this was possible; BBC didn't plan *The Ascent of Man* to be used as an educational venture and when one of our staff was in Britain talking to them about the possibility of doing this, they were rather surprised. After thinking about it they then said,

"Well, why isn't this being done in Britain?" So we've been in touch with the Open University people—Sir Walter Perry and others—to suggest this possibility and they're now considering it. If we can use programs developed for entertainment for educational purposes, it opens a whole range of possibilities to us, and we're certainly thinking about some of these. An example is the *Adams Family Chronicle*, which is now being done by WNET and which will hopefully emerge to be available in early winter. The *Adams Family Chronicle* will take the Adams family from the Revolutionary period through about 1900. Now, the problem with the format, as far as we're concerned, is that the episodes are dramatic ones. They are designed as dramatic events to illustrate what happened to the Adams family and how the Adams family was of considerable significance to our country in those early days. The question is "Can you learn history through that format?" We think you can if the programs are properly done. At least we believe *The Ascent of Man* demonstrated the point that good TV programs designed for purposes of entertainment, with some educational implications in the thinking of those who do the design work, can be very useful for educational purposes.

I think that the impact of television on course completion (by that I mean the number of people that actually take the final examination and get a grade in these courses) has been very impressive. Let me tell you about our experience with *Psychology Today*, which actually launched us into this kind of activity. We were working with CMR, which is a corporation that was then in Del Mar, next door to La Jolla, in California. CRM came to us and suggested that they'd had such a phenomenal success with their introductory psychology book they'd like to try and work with us to make a correspondence course out of it, using the book as the basis of the course. We thought that was an interesting idea, and because the chairman of our psychology department had been the principal editor we thought we were on safe ground, so we proceeded. You may have seen the announcement in *Psychology Today* magazine; it was a two-page ad. Some 7,000 persons responded to that announcement although the ad said it was going to cost \$100 to take the course. We converted that 7,000 into about 2,500 registrations. All through the design of the course, we worked with psychologists who were keenly aware of motivation. We wanted every person to complete the course.

In proprietary kinds of correspondence study, 17-25 percent completion is about what you expect. We in universities do a little better—maybe 30-35 per cent completed. So in our new course all kinds of motivation were built in at considerable expense. But the results were still only 35 per cent complet-

ing the course despite these efforts. Then we discovered some of the award-winning films CRM was using to stimulate sales of the book, and we said, "Why don't we add that component to what we have and create a telecourse or a learning package out of it?" So, working with our local public television station, KPBS, we added tops and tails to the films. Then we tried the course experimentally in San Diego; later in Los Angeles. We were amazed to find that the completion rate was over 60 per cent when we did that, and it held up in later tests. We think that's very significant and worthy of further experimentation.

Well, the institutions we've heard from about *The Ascent of Man* have had as much as 90 per cent completion rates. That's very significant. Now, why does it happen? The only thing I can suggest is that if you're working at home on an independent study course or correspondence course, a lot of things intervene and you don't always get around to doing it. But if that television program comes around once a week and sort of glues you to the set and forces you to think that you're going to have to move that much further forward each day or each week, then perhaps that provides the needed stimulus. Whatever it is, it's been effective, and we should be looking into that aspect when we get into the real research studies.

Another matter of significance was the necessity to create an association, a network, if you will, of institutions of higher education which would be willing to offer the course for credit in their area, and to create a marketing arrangement which would be attractive enough to induce them to join with us in the venture. There was no network of institutions around the country that was known to be interested, and there was no certain way of identifying them. We'd had a little experience with this with the Course by Newspaper we had developed at UCSD. In the first year 185 institutions offered that course for credit in their local areas, working with the local newspapers. So we had that contact, but they didn't turn out to be logically grouped-like members of the National University Extension Association. The interested institutions don't seem to fall into any of those usual associations. They cut across every kind of description that you might think of.

So we had to start, in a sense, from scratch. Through the Course by Newspaper, *The Ascent of Man*, and now *The Classic Theatre*, we are developing around the country, a group of people and institutions who see the offering of courses for independent students as something that they want to keep doing, and so I assume that we now have a system evolving. And it seems to me that's of great importance to all of us who are interested in na-

tional media courses. There would appear to me to be 100 to 150 four-year institutions that are showing this kind of interest—interest enough, for example, to take a course through the curricular process, and get it approved for credit. I would judge as many as 200 two-year institutions are similarly interested.

Another significant aspect is the need for development of new teams, new kinds of working associations, and this is a terribly complex procedure. There are so many different kinds of agencies, groups, and organizations involved—groups that have not worked together before in any real way. The problem of getting them to understand what we are trying to do and of motivating them to act on it in some sort of cohesive way was perhaps the most difficult thing we had to do in bringing these projects into being. It continues to be problematical, as new groups or new agencies come into the picture. Fortunately, the process did work, and we now think that there's a much greater recognition of the potential of this idea and the willingness to share in the effort to achieve it. To start with, you have the producer of the TV series. As Dick has suggested, Time-Life has been putting up a lot of hard money to bring BBC imports into the country and make them available to us. Time-Life has a very important role to play and others, hopefully, are going to be doing this sort of thing. But you have to adapt whatever is brought from abroad to American needs. For example, most of the imports, as I know them, are about 51 minutes in length, and for our television purposes, we require about 58 minutes, so someone has to add the time segments. In *The Classic Theater*, *The Humanities in Drama* you're going to see this done beautifully by WGBH in Boston.

When we started organizing the courses, we failed to appreciate how the public broadcasting stations operated. We believed if we went to Corporation for Public Broadcasting we would then get to all of the stations in the system, and it would be very simple. It turns out it's anything but that; each station acts quite independently, and so it was necessary for us to make contacts with all of the 240-odd of these stations and work out arrangements with them.

I think the public broadcasting stations are the key to the success of these programs. Their role is a very crucial one because the success of the venture is going to depend a lot on how much publicity the station gives to the fact that a given feature is coming on the air at a certain time. And if the institutions don't work very closely with the public TV station, then there isn't going to be nearly the impact in the community that there could be.

Another key factor is the book publisher. The publisher is an extremely important element, and obviously he's going to have to work against time deadlines that frighten him and frighten us. If you have about three or four months to get several books out, as we did, you know what I mean. So the publisher really has to be very flexible, and we've been extremely fortunate in working with the people at Educational Associates (A subsidiary of Little-Brown) that saw this idea and helped us pull it together.

Also important is the sponsor. We've heard about the sponsors, and obviously if we didn't have them, we wouldn't get the coverage around the country, generally speaking. It makes it a lot easier for the local broadcasting stations to put the program on the air if its time is being paid for by a national sponsor. Mobil has done this; you see Mobil's name associated with much of what comes in from BBC. Other oil companies, and banks as well, are now beginning to sponsor programs. The National Endowment for the Humanities is funding part of *Classic Theater* in this regard. I'm delighted the government is getting into this too,

because it's a very important element in the whole process.

That is the significance of *The Ascent of Man* and other efforts like it, as we've seen it thus far. There are a couple of approaches to doing this that I think we ought to know about. We, at UCSD, did *The Ascent of Man* on what we might call a shoe-string approach. We tried to get little bits of money from here and there to put up the necessary front money to make the course possible. This is in great contrast to the way we developed the Course by Newspaper, where we've been very handsomely funded by the National Endowment for the Humanities, and over the years (we're now talking with NEH about courses five, six, seven, and eight), the National Endowment contribution to the project will have been something in excess of a million and a half dollars. Grants like that enable a lot of things to happen which the money that we and Miami-Dade were able to scrape together to develop *The Ascent of Man* don't allow for. Consequently it was necessary to get teamwork. We were fortunate to be able to bring together the elements necessary to create a magnificent success.

Ascent of Man—A Course of Study

**Franklin G. Bouwsma
Miami-Dade Community College**

A completely unique and innovative approach to national open learning was attempted by a joint effort of Miami-Dade Community College in Florida and the University of California in San Diego. Miami-Dade had previous national open learning experience in the development and operation of its documentary-based telecourse, *Man and Environment*. This series was the first totally packaged course of learning materials using radio, television, printed text, study guide, and a computer-based study system. It has been used on a syndicated basis by over 70 colleges around the country. The University of California had previous national open learning experience in its design, development, and operation of the first national newspaper course—the course titled *America and the Future of Man*. It enrolled some 8,000 students, who studied the newspaper lectures printed in over 200 newspapers around the country.

Both Dr. Robert McCabe, the executive vice-president of Miami-Dade Community College, and Dr. Martin Chamberlain, assistant chancellor of extended studies at the University of California at San Diego, were convinced that the excellent television film series developed by the BBC with Dr. Jacob Bronowski could be used as a basis for national television course for credit. Meetings were held between the two institutions, and it was agreed that they would work cooperatively in the development and distribution of materials. The University of California at San Diego began the planning and development of course materials to be used at the junior and senior upper division level of colleges and universities, while Miami-Dade organized a group of faculty members at their college in Florida and began the design and writing of the freshman and sophomore-level course materials. The necessary approvals were obtained, and the faculty writers began preparation of the support materials for the existing BBC materials and the excellent book entitled *The Ascent of Man*. The author of the book and series, Dr. Bronowski, made important contributions to the course materials' development, as he had done with the BBC series, which is actually a personal history of the scientific development of the human race. The renowned senior fellow of the Salk Institute of LaJolla, Calif., opened his home and his files, and agreed to review each section of the project in order to afford a clear understanding of what he felt needed to be done.

Rarely, if ever, has an educational project had the authenticity of this one—with the central figure of Dr. Bronowski and his book, *The Ascent of Man*, the previous best-seller in England, the excellent documentary shot by BBC on location around the world with Dr. Bronowski, and the experienced staffs of the two institutions working with the video cassettes and the print materials

on both coasts at the same time. The availability of the film series and the book in advance, with the advice of Dr. Bronowski, set up a standard for excellence which was a goal for all staff involved. The project gained momentum through the summer months, and more staff members were added as the colleges began to work out the other details of the course. It was assumed that many of the colleges around the country would require much assistance in setting up an open learning course for the first time.

The use of public broadcasting stations across the country in prime evening time and a large national general audience was already assured. A potential national course would be possible if the colleges could be organized to use the course as part of their academic offering to the communities they served, in cooperation with their local public broadcasting station. The colleges were to be organized in a national consortium which would receive various assistance packages produced by UCSD and Miami-Dade. The press kit was created for publicity use on television or at meetings where the course might be announced. The press kit included news stories, feature stories, editorials or print media, and public service announcements for use on both radio and television. An information brochure was developed and sent to every institution responding to the first flyer, which had been sent out to hundreds of college and university presidents.

A major package of materials was organized into an administrative and academic support packet. This no-frills binder contains possibly the most valuable set of executive and faculty guidelines ever devised for national use of a college course in the country. Four of the segments of the administrative and academic support packet supply a distillation of information based on years of experience in a college external course field. They are: the rationale for the utilization of *The Ascent of Man* TV series as a college credit course, recruitment strategies for generating enrollment in the course, administrative considerations with more than 15 specific in-detail sections, and computing costs. They afford a precise basis for estimating cost per student and for comparing expenses of external programs with those of regular campus programs.

The teacher's guide, too, is coordinated with the films and with the study guide. There's additional direction for instructors who have not previously been active in external courses—136 pages in all. The question bank, or test bank, follows the sequence of the films and the study guide. It supplies 124 pages of multiple choice questions, keyed answers, and prescriptions for each of the 13 units

in the course. The question-prescription combination is usable in a computer-assisted instruction or a computerized instructional management system.

The printing or duplicating of various segments of the information brochure, and later the administrative and support packet, was a complicated and a very urgent operation. With schools throughout the country needing the brochure or the packet, other staff members from the various areas at Miami-Dade and at UCSD joined as assembly force. Logistics reached a kind of a high one day when materials were still on the presses at 9 a.m. and were in the airport post office by 3 p.m. to go out to 250 colleges. In the meantime, through the courtesy of Little, Brown and Company, complimentary copies of Jacob Bronowski's book and the anthology recommended by John F. Henahan of San Diego were being sent to educational institutions inquiring about the course. The packing and the mailing task was sizable, demanding, and expensive.

The RSVP computer-based instruction program was included in the package for the testing and grading of students on or off-campus. In this the external student would receive personalized and constructive help with variable study prescriptions from the computer in the form of weekly letters evaluating each unit's response by the student. The study guide for the course is attractively bound in color and glossy stock and illustrated. The 13 units correspond to similar units in the television series. Each unit includes an overview, main ideas, suggestions for watching the films, suggestions for reading the book, alternative viewpoints, links to other chapters, supplementary reading sources, and a thought-provoking epilogue on science responsibility. A sample copy of the study guide goes into each support packet.

Responsibility for contacting the colleges was split between Miami-Dade and UCSD, with constant referral by telephone between the institutions every day as the first broadcast hour approached. The hotline at San Diego was always busy with problems of materials delayed en route or even questions related to whether this was a course in humanities, natural sciences, or social sciences.

The Ascent of Man course went on the air in the wintertime—the rest is history. There were 250 colleges that were organized and put the course on the air for their academic credit—over 25,000 students, as far as we know, enrolled. It was a potential model course for national use based on local colleges offering it for their credit, in their own community, working with their local station. Many of the statistics are now being pulled together as research teams and individuals study the results. Those en-

rolled ranged from post-doctoral students to junior high school students—all taking the course for credit. Every day new information comes in about the new nontraditional student and how this course brought these students into higher education. This was an amazingly difficult and complex effort. Undoubtedly, it was made even more complicated because of the distances involved and the difficulty of communication between the hundreds of institutions and the two key institutions on each coast: the publishers of print materials, the distributors of the video cassettes, the key network station, WGBH—Boston, who developed and organized the American Broadcasting effort, and the Public Broadcasting Education Office, who steered and prodded all problems to a satisfactory conclusion.

Now, if this report makes it sound as though two institutions did all the work, nothing can be

farther from the truth. Every station, every college, every publisher of materials had many people involved throughout the year, making it all come together regularly every week for thousands of students. Now comes the question always asked: Given the opportunity, would you do it all again? Well, there's no question about it. *The Ascent of Man* is being offered again this fall. And the institutions, the publishers, the stations, and the colleges are ready to do it again. Only this time we hope to do it better. And we hope that we're better on our work. Last year we included 10 percent of all the colleges in the country in an effort which only began in July and hit the air in January—and remember that time sequence. We hope to increase our total to 15 or 20 per cent this next year, perhaps have 35-50 thousand students. We suspect that no one would have been more pleased than Jacob Bronowski, who felt, as Anthony Malone put it, that science is not the prerogative of the elite.



Richard L. Kelly is vice-president of Time-Life Multimedia. In this position, he is responsible for all of the operations of the division, including marketing, programming, advertising, and fulfillment. The multimedia division is responsible for the production and acquisition of such programs as the *Ascent of Man* series for use in education as well as industry. In addition to the use of courses in conjunction with public television showings, Time-Life Multimedia is actively marketing programs to colleges and universities, and in some instances high schools, for use in their course curriculum.

Ascent of Man—A Course of Study

**Richard L. Kelly
Time-Life Multimedia**

The term "multimedia" is definitely a catch-all at Time-Life. Our division is responsible for that which is not printed. If it moves, we have it.

About four years ago, we invested \$2 million in a project of the British Broadcasting Corporation (BBC). This amount covered just under one-half of the cost of producing *The Ascent of Man* program. The British Broadcasting Corporation does this quite a bit. They call it co-production; but that is a misnomer. It should be called co-financing. Without the money from companies in the United States and in Europe, many of the spectaculars for which the BBC is noted (such as Alistaire Cook's *America* or Kenneth Clark's *Civilisation*) would not occur. It is a simple matter; the money BBC has available does not cover the cost of doing these elaborate productions; therefore, they seek outside help.

When Time-Life invested the \$2 million, we had the goal of trying to recover that investment, plus make a profit on selling that program. How this relates to the open learning concept should become clear shortly. Part of Time-Life's selling activity is centered on selling a series to a sponsor, usually a large corporation. The sponsor is then free to show the series on television. For us to get a corporate sponsor, in this case Mobil and the Arthur Vining Davis Foundation, we have to show some value, so we convinced these two companies that if they put *Ascent of Man* on public television by paying us a fee they would reap all of the benefits that a good citizen would get from doing such a noble deed. The reality was it was a devil of a sale for us to convince Mobil and Arthur Vining Davis that their money would be well-received. Finally, we convinced the two companies to buy the program from us. They then went out and talked to the Public Broadcasting System (PBS) to get them to agree to air the program twice in 1975. The second airing is going to occur this September. Obviously the key to open learning is the ability to get a program shown on television.

When our part of it was done we thought we had sort of done our deed. We had got our company part of its money back. Now all that was left to be done was to go ahead and take orders for the film to be used on campuses or even in high schools. Well, that wasn't to be the case. I must confess that when two schools, the University of California and Miami-Dade Community College, came to us independent of one another about 18 months ago with the idea of developing a course, our reception at

Time-Life was negative. We couldn't see the value of it, so we sort of passed the buck, and in passing it, we were fortunate in giving it to our sister company, Little, Brown and Company, which, as you probably know, is a major publishing force in the college marketplace. Little, Brown understood the possibility of the open learning concept and agreed to help the two schools work on it.

I still marvel at the fact that both institutions seemed to find the same idea almost simultaneously. It's also rather embarrassing for me to have to admit that Time-Life, a company devoted to education and enlightenment, at first just couldn't see the value of the *Ascent of Man* course. Well, with the success that we have had with this course this policy has changed. We are presently trying to get *The Ascent of Man* aired for a third showing, provided we can sell the sponsors on paying for it.

We also have what we would like to think are several other sequels to *Ascent of Man*'s quality. The one most soon to be brought in is called *Europe, the Mighty Continent*. The 13-hour series is a history of Europe from 1900 to today. It doesn't have anyone with the credentials of Dr. Jacob Bronowski, but it does have Peter Ustanov as the narrator. Peter Ustanov has gotten some extraordinary coaching from John Terrain, who was the author of the book of the same title. We are very anxious to enlarge the concept of open learning through these new courses, and will be actively seeking corporate sponsors to pay the cost of putting these programs on the air.



Douglas F. Bodwell, director of educational activities for the Corporation for Public Broadcasting, was formerly associated with the American Council on Education as staff associate, Office of Academic Affairs, and assistant director of the Academic Administration Internship Program. Prior to his association with the American Council on Education, Mr. Bodwell was assistant to the president of Fisk University, Nashville, Tennessee, and assistant director of the Columbia College Fund, Columbia University. Mr. Bodwell has worked closely with the Education Task Force Study of the Advisory Council of National Organizations (ACNO) to CPB, where educators and broadcasters are reviewing current practices and future trends in the use of public radio and television for educational purposes. Mr. Bodwell holds a law degree from Georgetown University Law Center (J.D.) and an A.B. in American History from Columbia University. He is a member of the District of Columbia Bar.

Public Broadcasting and Education

Douglas Bodwell Corporation for Public Broadcasting

The Corporation for Public Broadcasting, which resulted from the Public Broadcasting Act of 1967, was designed to provide a national focus for something that was already in existence: educational television and educational radio.

The CPB is a private non-governmental corporation. Its president and its board are appointed by the President of the United States and confirmed by the Senate. CPB and public broadcasting receive their funding under the Labor-HEW Appropriations Bill. This year we received \$62 million from the Congress.

The Corporation was designed to remove programming concerns from the purview and authority of the Congress and the Executive Branch. The \$62 million that we received is broken down roughly in the following

fashion: we currently pass about 40 per cent of the CPB appropriation directly to the public television and radio stations. CPB has a long-range funding bill before the Congress which calls for five-year appropriations and authorizations. The bill has gone through the Senate and it is in process of hearings in the House communications subcommittee which has the oversight responsibility of CPB. That committee reported out this bill at a level of \$88 million for fiscal year 1976 going to \$160 million in five years. The Senate amounts are the same. The House Appropriations Committee will hear the bill not later than July 22. We expect to be on continuing resolution (that means the \$62 figure) for at least six months of the next year and, of course, we can't predict the final results of the legislative process. Three of the four committees which have to act on the bill have acted. The industry feels it is extremely important that we have a predictable funding situation to enable us to do some of the kinds of planning that need to be done for the development of the Public Broadcasting System.

I mentioned the pass through funds—the community service grants—that we provide Public Radio and Public Television stations. We also have some general responsibilities in information gathering and dissemination, and in research, development, and planning. We share with the Public Broadcasting Service, under a partnership agreement worked out in 1973, some responsibilities for programs which have CPB funding. At the continuing resolution level, because of inflation, for example rising interconnection costs for the PBS interconnect service, our television production funds will drop from \$11 million this year to \$8 million, so we are in a very tight financial posture. Hopefully, with the passage of the long-range financing bill, that situation will be improved.

About a year ago, the Corporation for Public Broadcasting asked its Advisory Council of National Organizations, which is a group composed primarily of national staff members from 50 major national organizations including the AFL-CIO, the American Jewish Committee, the National Education Association, the American Association of School Administrators, American Council on Education, and the National University Extension Association and the National Catholic Education Association to develop a plan to advise the CPB about its role in education.

One of the mandates that the Corporation has had since its act was passed in 1967 is to encourage the use of television and radio for instruction.

The Corporation has made several attempts to meet that mandate. For instance, we have been involved in the developmental funding of *Sesame*

Street, Electric Company, and the early *Mister Rogers* series. We have also commissioned several studies. Ed Cohen, director of the Agency for Instructional Television, did a survey in 1969 on continuing education and television. It sits on the shelf. Jim Perkins of Cornell did a survey in 1971. It, too, sits on the shelf, although it resulted in a project called ALPS (Adult Learning Program Service) which the Corporation explored with a variety of people around the country to address the needs of adult illiterates. That project was shelved in 1973, and funds were instead put into the CTW series, *Feeling Good*, the health show which many of you may have seen. When this decision was made, there were a lot of dissatisfied people who felt the Corporation still had not met its basic responsibilities or fully considered its basic role in education. In January of 1974, CPB's board turned to this Advisory Council. The Advisory Council developed a plan which included four task forces in four areas of education—early childhood; elementary, secondary, and teacher training; post-secondary formal; and general adult education, which ranged from adult basic education to continuing professional education. The Council undertook a year-long project to come up with a report which includes some 116 pages of recommendations. We have summarized the general categories of recommendations in a pamphlet which is available today.

In essence, what we have in this report is a massive game plan for a relationship between public broadcasting and education. There is no glamour, there is no glitter, there is no call for a new *Sesame Street* in any of the recommendations. What is called for is the further development of some fundamental and basic relationships between public broadcasters and educators at the local level, and for some activities of a similar nature at the national level. It's important to recognize that neither the Advisory Council nor the members of the task forces considered that all these activities should be undertaken by the Corporation or ought to be funded by the Corporation or public broadcasting. There was a recognition that such an effort would represent a tremendous financial and personnel commitment that would have to be made on the part of education.

CPB undertook to get system advice on the ACNO Education Report and we are beginning now to go beyond the system and to talk to educational groups about the Report and its recommendations. We will be meeting with some federal educational personnel and with some of the boards of the national agencies in education to begin to define roles for the educational applications of public broadcasting and by September to sort out appropriate roles for CPB in this task.

I would like to review some of the 58 recommendations made in the ACNO Report, including 11 major areas of recommendation. The 11 are:

1. The Corporation for Public Broadcasting should intensify its efforts to bridge the traditional chasm between broadcasting and education, building a working partnership to serve their common purposes.
2. The Corporation for Public Broadcasting should recognize and support the principle of cultural pluralism, which is rooted in our common concerns as humans as well as the differences which enhance the strength and diversity of the American people.
3. The Corporation for Public Broadcasting should undertake activities to assist the professional development of the educators and broadcasters engaged in educational broadcasting, and encourage the application of broadcasting for the in-service education of teachers.
4. The Corporation for Public Broadcasting should undertake promptly certain instructional programming activities, taking into account the legal and traditional roles of other educational agencies and institutions.
5. The Corporation for Public Broadcasting should assure adequate attention to the strategies, materials, and other services which are critical to effective use of educational programming.
6. The Corporation for Public Broadcasting should actively develop the educational programming applications of related technologies, in order to meet the educational needs of people at all age levels.
7. The Corporation for Public Broadcasting should, through its own operations and through support of others' work, assure an effective program of research, evaluation, and demonstration regarding educational applications of public broadcasting and related technologies.
8. The Corporation for Public Broadcasting should facilitate the development of new, more flexible patterns of rights clearance.
9. The Corporation for Public Broadcasting should encourage the development of the skills of aural-visual literacy and critical listening/viewing.
10. The Corporation for Public Broadcasting should recognize and support effective activities for promotion and community

outreach in the educational applications of broadcasting.

11. The Corporation for Public Broadcasting should move at once to act upon these recommendations, initially by conducting a financial analysis, determining a calendar agenda for specific actions, and assigning responsibility for developing funding. The Advisory Council is a willing partner in assisting implementation of the recommendations and seeking solutions to the funding problems.

The recommendations are not in any priority order, although all of the task forces and the Advisory Council would consider that the first two are fundamental to any activity in this area. Incorporated under those two general recommendation categories are recommendations that relate to the development of a clearinghouse on public broadcasting and education to provide a common, authoritative source of information, both data-wise and anecdotal, about the uses of public broadcasting in education. The kinds of information that would be collected would enable all of us, educators and public broadcasters alike, to begin to develop some trend analyses. CPB is urged to undertake a more formal liaison with federal agencies in an attempt to coordinate activities with HEW, the Arts and Humanities endowments, the National Science Foundation, and others.

One of the things that several people have complained about is the pattern of discrimination against nontraditional students that is inherent in many federal regulations, and we're being called upon to address issues like that. I am not sure that is appropriate. In many important ways it's up to the institutional and professional education associations to speak to those issues. We are being asked, in general, to undertake a variety of activities, to serve as a catalyst, as a broker, as a funder, as a general R and D resource for public broadcasting and education.

Some programming and related functions are recommended. In higher education there is concern with developing a mechanism that would include an advisory committee set up to relate to CPB/PBS decision-making regarding program funding. There are recommendations that we develop a task force on rights clearances, and that CPB and others first look at some of the problems, then exercise some leadership to support on-going activities designed to broaden the use of available public broadcasting material.

You have before you some samples of the types of recommendations made. You should recognize there is interest on the part of television managers

in the general area of adult and post-secondary education. Some of them see this as a needed service that they would like to provide.

It is difficult to make any generalizations about public broadcasting. It's as complicated and as varied as higher education ever thought of being, but there is strong interest in multiple audience-use programs like *The Ascent of Man*.

Jack Mitchell is director of National Public Radio's (NPR) informational program department. In this position, he has charge of all the network's news, public affairs, and educational offerings. He came to National Public Radio as the network's first employee, serving as assistant to the president during the formative period in the early 1970's, then later becoming the first producer of special events coverage. Dr. Mitchell has spent a year at BBC Radio in London on a foreign fellowship from the Corporation for Public Broadcasting to do an analysis of the BBC's radio programming philosophy. Prior to this fellowship with CPB, Dr. Mitchell was public affairs director at WHA radio in Madison, Wisconsin, and assistant professor in the department of journalism at the University of Wisconsin Extension. His earlier broadcasting experience was as producer and reporter at WQRS, Detroit; WFDF, Flint; and WUOM, Ann Arbor, Michigan.



Public Broadcasting and Education

**Jack Mitchell
National Public Radio**

Not every non-commercial radio station can be a member of National Public Radio. NPR and CPB have established criteria based on the station's power, the size of its staff, operating hours, etc. The notion was to eliminate any station that was not really serious about serving the public. One of the criteria requires orientation of the station programming to be primarily toward the general public. A station that is primarily or exclusively instructional does not qualify for CPB support or NPR membership, so WNYE in New York City, which is primarily an instructional in-school service, is not a member of National Public Radio, and under the present rules would not be allowed to be.

In other words, the kind of station that we have for the most part is not particularly interested in the area of in-school instruction or post-secondary instruction. Its primary purpose is to serve a general public audience in the

area of cultural affairs, news, and public affairs and-increasingly-minority programming, in response to special small groups within the community that require special services. That is not to say that we don't have stations that do instruction. About 20 member stations are licensed to school boards and almost all of those stations do several hours a day of in-school instructional programming. Seventy per cent of our stations are licensed to universities, but most of those, with a few notable exceptions, do not do credit courses by radio. A few, particularly some of the older land-grant university stations, have been quite active in that area, but by-and-large it's not something that our stations have done.

The bread-and-butter of many of our stations is classical music, with public affairs the second major area to which they are dedicated. NPR exists to supplement and contribute to the programming of these stations. Our board of directors is elected by those stations. We tend to reflect their needs and interests. So, not surprisingly, our primary interest has been cultural programming and news and public affairs, and since the stations are in a better position to handle their own cultural programming, our primary emphasis has been in public affairs. That is changing somewhat. We are increasingly going into the area of cultural programming, but our primary emphasis has been news and public affairs.

When we talk about education or instruction in radio, the debate almost always comes down to the area of in-school instruction. Whether NPR should be serving those stations that provide this service is an on-going controversy within the NPR family. About a year ago NPR made the policy decision that it would not continue to bicycle tapes among the 20 or 25 stations that are providing local instructional services. That decision was reversed at least for a year, and who knows which way it is going to go in the long run? Irrespective of what that final decision is, I think it is safe to say that there is very little demand in the system and, frankly, very little interest within NPR in making the extensive exchange of in-school materials between our stations a major function of NPR. We may continue to do it, but that is certainly not where our future rests in that area. Where does it rest? It will probably center around the phrases in our title, which indicate that our programming is national, it is public, and it is radio. And with those words as a guide, we must turn down a lot of what we are often asked to do, but I think those words also open up tremendous possibilities.

The national element is not insurmountable. There are incredible problems in trying to do national programming, but they are not things with which we cannot deal. When we say that the pro-

gramming should be public and radio, we are saying that just because it's audio, just because it exists on tape, just because it has instructional purposes, it doesn't mean that broadcast is necessarily the best way to deliver instruction. Particularly with cassette technology, tapes are probably more convenient than broadcast. If your primary target is a small group, a group that can be pin-pointed, it is just as well to play the tape for them as it is to put it out on the radio where it will reach large groups of people who are not interested in this specialized material.

If, on the other hand, we can design programs which at the same time serve your specialized people in organized learning situations and appeal to a wider audience, then we are into broadcasting and that's the direction that we want to take. We cannot forget the primary general audience. That does not mean that we cannot also serve educational purposes along the way. A perfect example, of course, is the courses-by-newspaper, in which instructional matter appears in newspapers around the country in papers with a circulation of about 30 million people. About 15 million people are thought to actually read these articles and a few thousand read these articles for credit in local institutions. Well, here you are serving two audiences, and although you might argue that the articles are printed for those credit students, it would seem to me, and to NPR, that those 15 million general readers are really the primary audience for this service. The credit element is fine and worthy, but those 15 million people are the main concern.

Of course you are all familiar with *The Ascent of Man*, example in which the program is designed for a general viewing audience on television, but is also being used in credit situations. Well, that's the model that we think can be applied to National Public Radio. We think that any programming we do must have some reason for being broadcast, and that reason is usually to reach a general audience. There has been a reorganization at NPR in the programming area. Initially we were set up with a department of news and public affairs, a department of cultural programming, and a department of education, which was on the books but was never staffed. With our philosophy that any instruction that we do is really going to be tied to general audience programming, we have now erased from the books that educational office, and expanded the role of the news and public affairs to include all informational programming.

The notion is that we are going to try to develop programs that both serve the general audience and have an instructional component. Education will not be kept in a ghetto. As a first example of how this may work, we have received a grant from the National Endowment for the Humanities to be the

primary national media vehicle for the *American Issues Forum*. The *American Issues Forum* is a bicentennial program in which the citizens of this country are being asked to reconsider some basic themes in American life. Our radio programming will be a monthly three-hour block of programming which will include documentary elements designed to set up the questions, followed by national radio call-in in which people will react to what they have heard, and speak to various guests throughout the country, including a number of historians.

The same *American Issues Forum* is the basis for the national courses by newspaper this year, beginning in the fall. One objective is to get together with the courses-by-newspaper people to try to match our two enterprises. One of their great problems is that the students enrolled in courses by newspaper feel cut off from other students involved in the courses. They have a couple of contact sessions with their local institutions, but they still feel that is inadequate. So in our programming, we will attempt to tie in with the courses by newspaper, using many of the same people who are writing their courses. Students who read the newspaper articles can call in on our call-in show and perhaps talk to the person who wrote the article for the newspaper. We, in turn, will be promoting the use of the articles and their printed material. The universities that are offering the courses by news-

papers will be sent material about our radio broadcasts to suggest that the students enrolled in their institutions listen to those broadcasts and participate in them. This is natural tie-in between the courses by newspaper and the National Radio broadcasts, and it just happened that we were going our way and they were going their way. It seemed to mesh, and we are trying to come together. In the future we might very well plan courses with these components in mind and, like the courses by newspapers, this is primarily aimed at the national audience. Just one final example:

We are now also discussing seriously the possibilities of tying instructional, continuing education components into our on-going news and public affairs programming. If you are going to do a course on political parties, what better time to do it than during an election campaign and tie it to the events of the campaign, to integrate that normal public affairs programming that we would plan to do anyway with a strong, academically sound, instructional component? It has unique value for the student. It has unique value for the two general audiences. The needs of both are served by the marriage of broadcast journalism and education. This project has not been pursued as far as it needs to be, but that's the direction that I think Public Radio will be going in serving education.



Rhea G. Sikes joined the Public Broadcasting Service in 1973 as the first to hold the newly created position of coordinator of educative services. Representing the PBS Programming Department and member PBS stations, Ms. Sikes directs the review, evaluation, and coordination of the broad spectrum of informational and educational programming presented by PBS to both general and classroom audiences. The former director of educational services for WQED, Pittsburgh, Ms. Sikes had served as assistant program manager, producer of the first Television Teaching Demonstration, and producer and executive producer for educational programming during her 18-year association with the station. Ms. Sikes received a George Foster Peabody Award for television education in 1971. In that same year she also received the CPB Community Service Award, and, in 1974, a citation for contributions to the advancement of education from the Pennsylvania Department of Education.

Public Broadcasting and Education

**Rhea G. Sikes
Public Broadcasting Service**

If you do not understand the difference between CPB and PBS and all that other alphabet soup which clusters around educational technology, you are not alone! About two weeks ago our esteemed *Washington Post* came out with an editorial with headlines referring to the PBS board, while the editorial addressed itself to the people the President was suggesting to be members of the CPB board. Later, an editorial in a newspaper in one of our leading southwestern states was brought to my attention in which PBS was absolutely crucified and embroiled for having put its monies into a series which this editorial writer felt was very threatening to the American public. Well, in the first place, to the best of my knowledge, that particular series has not been funded. And in the second place, PBS does not have one penny to fund anything. So maybe we can begin to see what PBS is and how it works. Then let me pose some questions to you on how you can help us decide how we can best service you.

PBS is an experiment in democracy.

I guess I compare it to the Continental Congress sometimes, but The Public Broadcasting Service is an agency that is supported by the member public television stations: 152 licensees across the United States who operate 256 television stations, including those in Guam, American Samoa, the Virgin Islands, and Puerto Rico.

At PBS, there are 171 persons in 14 different departments attempting to meet the needs of these 256 station managers of stations licensed in four different areas. Twenty-eight per cent of those stations are licensed to state organizations. They may be state departments of education, they may be state commissions that have been set up expressly to run a state network of television stations. Twenty-six per cent of those licensees are owned and operated by colleges and universities, and they are an integral part of that particular college and university's total system. Sixteen percent of those stations are owned and operated by school systems, whether they are one municipal school system or whether they are a consortium of school systems. Twenty-eight per cent of those stations are licensed to community, non-profit organizations, and corporations which have been set up by the communities themselves. Each of these public television stations, because of the very nature of its license, has certain priority commitments.

Certainly the commitments of a public school station may be different from those of a community-owned and operated station. A university would probably have far more concern about serving the needs of the communities served by the university and its extension services than would a state licensed system which must attempt to meet educational needs on all levels within the state. This is kind of exciting, because I think the whole way of life, the life styles of America, are going more and more into areas of diversity, and maybe, at long last, we are getting the clue from our lifestyles. From our awarenesses of people's uniqueness, we are learning enough about learning to know that people have their own entry points. We are learning enough about the fact that there is nothing holy about going to school from the ages of six to 22 without interruption. We certainly are finding out that adults want to know more, and from the data that we are getting back, we find that when people are offered an opportunity to study at their convenience, they are doing so.

Our primary function is to meet the programming needs of those stations as they identify them to us, and to offer them the accompanying services which will help them meet their community needs. Each of those licensees, under FCC regulations,

has the total responsibility for programming that station. PBS has no authority whatsoever, in contrast with our commercial networks, in which they contract with various stations throughout the country to carry X number of hours of their programming. PBS can only offer a program. The individual station will determine whether or not it will carry that program.

We set up a national schedule based on a great deal of carriage data, demographics, Nielsen ratings, and staff intuitions, expertise, and discussions. But this means nothing, because every station in this country can immediately do with that schedule as it wishes. You will find that many of them are dubbing off the air for delayed broadcast.

Let me give you our budget, and you compare it to yours. The total budget for PBS this current year is \$3,875,000. Eight hundred thousand dollars of that comes to us from CPB, \$75,000 comes from special grants, such as a captioning program we are doing now for the deaf, and the three million comes from the stations themselves. In addition to that, the Corporation makes available to the system \$9.8 million for the interconnection service, for the delay centers, for getting the signal out there.

It is my firm belief that everything in public broadcasting is "educative," that we can and do learn from television, whether or not we are learning something we want to learn, whether or not it is good, whether or not it is mediocre. The great challenge for public broadcasting is to bring to this nation programming of excellence. That's the major criteria in any subject area: to meet the diverse needs of this country and to assess our answers to those needs in terms of usability by the educational institutions of the country.

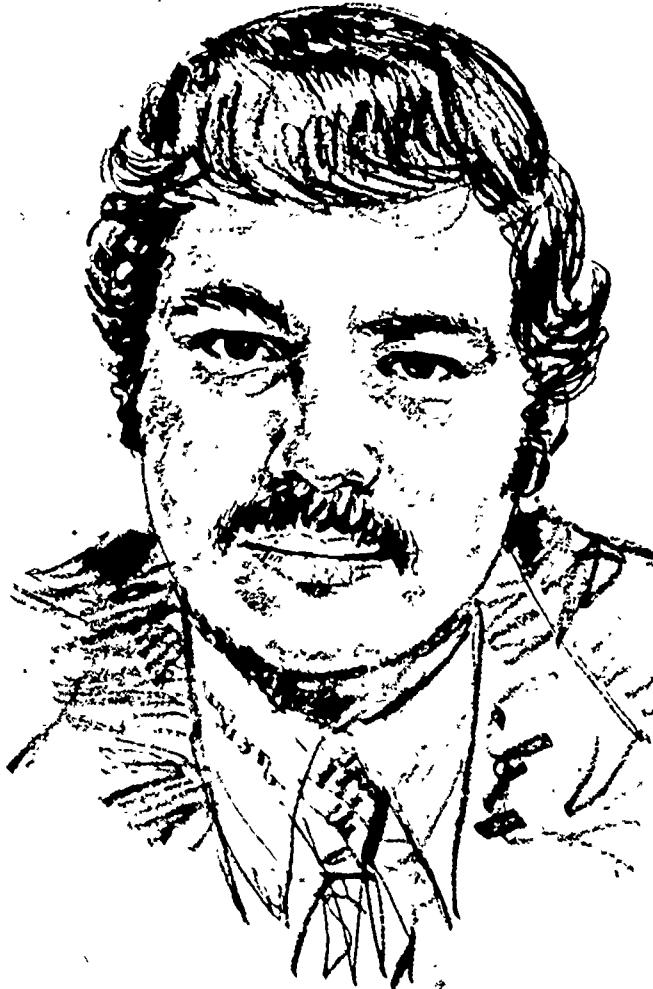
Like our public broadcasting stations, you in your communities are responsible for the education offered by you to people who come to you. I think the responsibility should belong there. I think you should have the responsibility locally, just as those public broadcasting stations have, to assume that responsibility to meet immediately the needs of your community because they are diverse. New York City and Fargo, North Dakota, are two different communities, and the people in those communities have a different kind of need. And so we are attempting to assess, as far in advance as we can, those programs offered us which appear to have value for you, if we can surround them with the proper kind of support material so you may adjust them to your own use. I would like to take *The Ascent of Man* as an example. You know what happened with *The Ascent of Man*. I won't recount that on a national level. You know that universities and

colleges had the right to accept that, to adjust it, to do as they wished with the curriculum, which was developed completely independent of the broadcasting arm of this consortium that we have. And yet in Pennsylvania, for the first time, the University of Pittsburgh, Penn State and Temple came together and developed their own curriculum, using *The Ascent of Man*. In addition to that, several local television programs were produced to localize the significance of the things that Jacob Bronowski had to say and apply them to Pennsylvania.

There was also a series of 40 radio programs produced to accompany the series. That is what I am talking about. If we can give you programs of excellence, if you can then look at that and assess them in terms of your needs, you may accept the kind of support materials offered you nationally, or you may think of ways in which you will develop materials to make them work where you are. That's where we are now, and that's where we will probably stay for awhile. I do feel we need to build in the proper lead time so that we can be more reflective and give you more time to develop those materials, to get the information out, to go through all the logistics one must go through in order to get the proper results.

It takes time to develop materials of excellence. It takes time to develop materials of excellence in television. *The Ascent of Man* was in production for five years. When you talk about the research that had to go into it, the development of the script, concepts, going on-site; it's incredible what is involved there. That's five years.

So it's not too early for us to anticipate what is ahead in a CPB and PBS cooperative investigatory exploration regarding satellite transmission. The Corporation and The Public Broadcasting Service are now seeking contracts, estimates to assess the cost of putting a ground receiver at every licensee in the country's station with the potential of making available to them four channels simultaneously. There is no reason why, within five years or less, we should not be able to begin to offer not only an educative service, but programs of excellence that have been very definitely designed for a formal instructional purpose. But this begins to raise all kinds of questions regarding National curriculum, who decides excellence, what is the content, who handles the registration, who develops the ancillary materials, etc. When and if satellite transmission plans jell, this must be a cooperative effort with a great deal of the responsibility placed upon the educators.



Joseph M. Aguayo currently serves as assistant to the president of the Children's Television Workshop. In this capacity, Mr. Aguayo serves as liaison between the Workshop and funding agencies in government. He is CTW's representative with bilingual and bicultural groups around the country relating the thoughts and concerns of Latin communities back to the Workshop. Mr. Aguayo has been deputy commissioner of Youth Services in the Human Resources Administration of New York City. Earlier in his career he directed programs for the Puerto Rican Forum, Inc., in New York. He has also been a consultant on the Mayor's Panel on the Decentralization of the Public School System of New York City. In 1969-1970, Mr. Aguayo was urban affairs assistant to the mayor of San Diego. Mr. Aguayo received a B.A. in philosophy along with a certificate in theology from the Immaculate Conception Seminary in Huntington, Long Island. He holds a M.S. from Columbia University's School of Social Work, and in 1969 received a certificate in urban affairs from Yale University.

The Future of Public Broadcasting: Where Do We Go from Here?

Joseph M. Aguayo
Children's Television Workshop

I am delighted to have the opportunity to share with you some insights as to the possible future of public broadcasting from the perspective of one individual who shares with many others at the Children's Television Workshop the excitement of exploring new ways of making learning enjoyable.

As has been amply described by the other members of the panel, who represent the keystones in this building bridge to communications, the age of educational broadcasting really sprang into prominence with the Public Broadcasting Act of 1967.

But the act did not come about in a vacuum. The 60's were an age of a soaring achievements for communications technology. The Russian Sputnik, the U.S. Apollo, and national assassinations have all highlighted the endless excitement that the media brought to our home screens. Is it any wonder

that the program *Star Trek* is now in its second generation of television life through animated form?

The seeds of another major break-through in media technology also took place in the 60's. A rather young, dynamic woman named Joan Ganz Cooney, working as a communications consultant with the Carnegie Foundation, pondered over the overpowering effect of television commercials on young children. Children who could not read at home would nevertheless identify their preferences for breakfast cereals, toothpaste, cookies, and toys at the stores. These "learning effects" took place after many hours of total absorption in television commercials, which were painstakingly prepared with exacting motivational research and trend-setting television techniques.

Thus, the "magic" of *Sesame Street* is to convert the "boob tube" into an effective instrument of enjoyable learning. Its secret formula is to incorporate rather sophisticated research about learning, child development, socio-linguistics, and applied psychology; then the best commercial television techniques are applied into an award-winning format that has captured the hearts and minds of millions of children throughout the world, through the programs known as *Sesame Street* and *The Electric Company*.

Educational or public broadcasting can be termed as "technology in search of constant application" or "making better what is good". Much of the same type of formative and summative research done for television programs now goes into our growing list of CTW products: games, books, puzzles, magazines, and international versions of *Sesame Street* (for example, *Plaza Sesamo*, *Vila Sesamo*, *Sesamestrasse*, *Bonjour Sesame*). These foreign language versions seek to stimulate the restless imagination and intellectual curiosity of children. We label these product approaches multi-media since they are different ways of reinforcing the lessons of cognitive comprehension.

It's obvious that telecommunications, whether television, the world of cable communications or satellite communications, has brought our world and its infinite universe within the confines of our homes. As an educational research and film production company, our approach to children is global and best reflected in the words of one of our songs:

No matter what your language, no matter what your name, lots of things can be the same.

The techniques used in each of our programs, whether in the United States or throughout Latin America or the European Theatre, must of necessity be culturally oriented to the lifestyles of the country, in a language and with symbols that children will understand. But of greatest significance to us

is the universality of children across the world—their intense awareness of self, an insatiable curiosity about life, and their defiance of barriers to learning. No matter what the content of the curriculum, whether self-concept, language, interpersonal relations, or the world around them, children seek to know. Our business is to fashion the best research and communication tools in a manner which they can readily understand.

As we enter the Bicentennial of the United States, it has become apparent that our young nation is a patchwork of many languages, customs, and lifestyles and that there is no real American way of doing anything.

The literacy of young and old alike poses similar problems for us. Whereas, our traditional in-school system attempts in an orderly and systematic fashion to provide the basic skills of reading, writing, and computation, still 24 per cent of all students from ages 14-18 are "dropping out". Even after 12 exhaustive years of schooling, the business community still rejects illiterate high schoolers who barely read at a fifth grade level. Many of our older citizens are perhaps literate at a fourth or fifth-grade level either in their native tongue or certainly in English. Yet the need to survive in this 20th-Century space age is becoming increasingly complex. It requires a basic 8th grade reading level to qualify for a stock clerk job in major department stores, or to take a basic apprenticeship test with a trade union hall, or to apply for civil service work at the state or municipal level.

The gradually decreasing level of literacy among both the young bread-winners and older citizens is becoming a matter of grave concern for educators, and employers alike. It's not just enough to simply hold instructional classes at night in a local school. Lifestyles are changing too rapidly for even neo-traditional learning programs. I believe that when one speaks of diversity in education within the context of non-traditional settings, one is clearly speaking of the applied use of media technology in education.

Space Age Technology:

In the world of broadcasting, astounding innovations are being made by the commercial entrepreneurs daily. Recently, the market has been filled with ads for mural screen television by the Muntz Corporation. Cable TV is bringing stronger signals to the hinterlands of Appalachia, the Deep South, the hills of Puerto Rico, and the vast stretches of the West. Is it too far-fetched to believe that an elderly grandmother or incapacitated young person could reach for the dial of a television set and tune in a specially selected program on job orientation, skills training, language instruction,

or first aid? Better yet, could not the same television set have a telephone dial and allow one channel to broadcast sales, specials, etc., and thus permit the viewer to purchase food, clothing, and medical supplies from the television set?

Just as we hear of quadraphonic sound which gives us the "feel" of the music, or the actual experience of what is happening before our eyes, could we not make television quadraphonic to permit our young children to "feel" the excitement of a natural wonder scene, or a teenager to experience the wonderment of chaos of a blue collar workshop, with machines whizzing by, or the light and sound computers blinking madly with flashing signs, or bilingual instruction which blends both English and a foreign language to enable students to "catch" the feel of an idiomatic expression in two languages. Certainly, these are not far-flung ideas, but well within the range of standard hardware which broadcast engineers and commercial studios are hawking in today's marketplace.

Moving to the world of books and magazines, why must workbooks for youngsters be only in print? Can we not catch the sight and sound of books that speak and move? All kids read comic books. Why not change supplemental readers to comic books in pulp form with bright, fantastic characters which have meaning for youngsters? We have recently experimented with such, called "Spidey Super stories," in association with Lee Marvel of Marvel Comics. The response of enthusiastic readers all over the country strongly encourages us to continue this new genre of literature.

Literacy for the nuclear generation of the 20th and 21st Centuries may very well be in the form of **visual image education**. Just a reflection on our experience with changing highway signs will demonstrate that "A picture is truly worth a thousand words." As we present a 30-second shot of a pussy cat tumbling off a couch and suddenly the letters C-A-T emerge over the picture, with little repetition, both the experience a child has with cat

and the code letters C-A-T will leave a more lasting, if not quicker, effect of the reality which is CAT, than any book can give.

As we speak of the needs to innovate in different ways, it's important to begin with the basics as we have recently learned. Teaching begins at home and parents are our first teachers of life. Our street, neighbors, friends, and relatives are the means by which all children learn the first facts of life. We've begun to create a series of films about how mothers and fathers in their natural roles can reinforce the essential learning skills that all children naturally have. Just as CTW began the revolution of tots in primary grades, so I truly believe that another revolution at home must begin. Somehow the wonders of newly devised technology must be geared towards unleashing the potential that parents have towards wanting the best for their children. We frequently complain about the need for more active parent participation in the school life of children, but we never quite seem to explore the school's impact on home life. No one ever took television seriously, until someone was curious enough to look behind the tubes and wires and saw the impact it was making on children's behavior.

To truly educate in this age of global, satellite communication means that educators like ourselves must first comprehend the nature of communications, its technology, and the changing needs of our civilization.

It requires a willingness to innovate our tried and true traditional forms of institutional education. To experiment in areas of the media which as yet are still underdeveloped, such as cable TV, educational movies, recordings, pulp type magazines, and games.

It is my earnest hope that next year at this time I will be at this conference with you, learning about some of your experiments involving the use of media technology in your own nontraditional settings. I look forward to that day and hope it comes soon.



George L. Hall is director of Public Telecommunications for the Commonwealth of Virginia. He began in commercial broadcasting in 1947, then entered ETV at the University of North Carolina in 1960. Mr. Hall has served on faculties at North Carolina State University and the University of Delaware, and is currently adjunct professor of mass communications at Virginia Commonwealth University in Richmond. He joined the staff of the National Association of Educational Broadcasters in 1967, serving five years as the association's research and development officer. He heads the first state agency in the nation responsible for coordinating all forms of telecommunications.

Statewide Telecommunications Systems for Open Learning

**George L. Hall
Virginia Public Telecommunications Council**

Let's not begin with technology. Let's begin with Mrs. Henry S. Dabney, Elizabeth, 32 years old. She lives with her husband and two children, Sara and Henry, Jr., on Locust Street in Crewe, Va., about 55 miles south of Richmond. Crewe is a farm marketing town of some 6,000 people, site of a big marshalling yard for the Norfolk and Western Railroad.

Elizabeth—Liz to her friends—has recently gone back to work after staying at home for several years before the children got old enough to go to school. She works as a bookkeeping clerk at McDowell's Discount Food Store over on Vine Street, 3½ blocks from her house, a colonial split-level which she and Henry are in the process of buying through FHA and the Southside Bank.

Henry, 34, is a sales manager for Silverman's Goodyear dealership out

on Highway 460. He has held that job since he graduated from Longwood College over in Farmville back in 1967. A graduation slightly deferred by a stint in the army.

Liz didn't finish college. She only had one year at Longwood when she married Henry and went to work to help put him through. Then came the two children. But she would like to go back to college very much to help her get a different job, one that would let her do what she likes best—work with children. Not teaching school, but, say, working on the staff of the Nottaway County Library in Crewe. She thinks that the library really needs a trained person to head up the children's room, and so does the county librarian, Richard Walton. But there is nobody local who has been trained, and the limited budget won't attract out-of-towners. There is no college, junior, community, or otherwise, in Crewe, or even very near it. The closest community college is at Keysville, but that is about 25 miles away. And then there is Longwood College at Farmville, and that is about 30 miles distance. Not too far for younger people with cars, maybe, but too far for Liz, a working mother in a one-car family. The most she could do is one course per semester—fall and spring. At that rate, she would be—as Liz puts it—"ancient" before she could finish.

But, let's write a happy ending to what otherwise might turn out to be a rather dreary and familiar story. Let's establish and operate the Virginia Open Learning System—a state-wide system to make formal learning opportunities at the higher education level conveniently available to people at home or at work. It is a system that depends on telecommunications to connect learners to instructional sources and to overcome time and space constraints of the sort which have traditionally tended to keep higher education closed out to people like Liz Dabney in Crewe. The sad fact is that we don't have a Virginia Open Learning System, although we do have many or most of the basic components. Let's pretend we have organized the necessary elements into a smoothly operating home.

What can Liz do to become involved in open learning? How can open learning help Liz? Telecommunications begins the process. The mass media—radio, television, newspapers, billboards, movie trailers, brochures handed out at the library check-out counter—bring the message to Liz that there is a new way of going to college, acquiring a skill, getting a degree. It is called open learning. It is fairly inexpensive, not too time-consuming, and it is flexible and convenient. At least that is what the promotional media claims. There is a WATS telephone number to call for more information and counseling. Liz talks it over with Henry

and the librarian, Richard Walton, and telephones VOLS on a weeknight (Please note: weeknight, although a daylight call would have been equally feasible.) In Richmond, her call is routed to an enrollment counselor who is prepared to explain in a general sort of way what the Virginia Open Learning System is... What its range of offerings is, its levels of cost, the learner commitments that may be necessary, and the like.

If the caller expresses an interest, the counselor is prepared to help the potential learner identify his or her own learning goals, first through conversational give-and-take by telephone, then by means of special written instruments mailed to the learner, instruments that help to measure aptitude, academic level, and personal needs. The same instruments allow for the confidential collection of certain personal data: age, occupation, along with certain socio-economic data and information about the learner's media facilities. Does she have a phonograph, TV set, radio, audiocassette player? What newspapers are locally available? What ETV signals? And so on. Actually, the data instruments are a little complicated for Liz, so she follows the counselor's advice. She calls him back by WATS line to get a little help in filling them out. Then she mails them back to Richmond. Very rapidly, the counselor reviews the information and, armed with a better professional understanding of his learner client, he gives her a call back to talk in greater detail about her ambitions, needs, desires, goals, and anxieties. What does she want to study? For what purposes? How rapidly? Of course, Liz, too, has questions. What are the specific costs? Time requirements? Is travel necessary? And, if there is travel, how often and to what point? What about exams, and what if she needs tutorial help—say in higher math? The fact that she does bookkeeping work doesn't mean that she is quick at calculus. Liz and the counselor talk by phone on two and three different occasions, then he asks her to give him several days to draw up a possible study program that would come close to meeting her particular needs as well as her time, travel, financial, and schedule requirements.

The counselor takes all the information that he has derived from Liz and turns to a computer access terminal located near his own desk. He has been carefully trained to use that sophisticated system directly, and he does so fluently. He inputs the information about Liz and asks the memory banks the kinds of course offerings available and necessary for her to move toward realization of her ambition—Library Science, emphasis: children's reading. The print-out initially is rough, almost meaningless to the casual observer. It contains the obligatory course structures, the pre-

requisites, and lists of elective arrays that appear to come closest to Liz's particular interests. The counselor takes the print-out and prunes almost savagely. He shapes it into a sensible listing of course requirements and possibilities not only having academic logic, but also conforming to such logistical constraints as course availability, cost level, time and schedule commitments, travel obligations, media access, and the like.

After having the material typed up in a highly readable sort catalogue form, the counselor mails a copy to Liz in Crewe, enclosing a request that she call him on the WATS line before actually reviewing it. He wants to be on the line to help her answer questions, as they arise during the first reading. This she does. In general, she is intrigued at the possibilities. But there are changes she feels should be made. For example, there is too much emphasis on literary criticism. That is not an area in which she has a strong interest or skill she believes she has, no matter what the tests may have indicated. The counselor makes the appropriate changes, substituting some additional course work in psychology, an area in which Liz does have a strong interest.

At the end of the telephone conference, the counselor suggests that Liz think over the prospect for several days before committing herself, talk it over with her husband, her children, the county librarian, and others whom she trusts and on whom she relies. These are the things she does — open learning isn't going to be magic. It will require Liz's time, concentration, and a certain amount of money. It will also require helpfulness from her family. She won't have as much free time as before, but all agree that she should go forward toward her ambition. Librarian Walton is especially pleased, and he volunteers to help her any way he can. He even calls Liz's counselor to let him know that the resources of the county library can be counted as if they were Liz's own, including the use of the two video cassette playback machines recently acquired through the Telecommunications Council. Liz signs up, and the enrollment counselor arranges for her to meet with the learning counselor, who will become her friend and confidant, her advisory guide, her tutor, through the several years of work ahead. At first they meet by phone, but then follows the counselor's having a thorough briefing about Liz from the enrollment specialist. And Liz receives a packet from her — for, in this case, Liz's permanent learning counselor is a **her**, headquartered in Richmond. The learning counselor lays out the schedule for an extensive set of course pre-tests to help to determine more exactly where Liz needs to begin her work, and to what credits she is already entitled.

The pre-tests are administered in three ways: paper and pencil, directly by telephone, and audio cassette. In this way, Liz is not tested merely on the basis of written performance.

Next, after reviewing the test results which the VOLS computer has profiled, the permanent counselor calls Liz to lay out the initial schedule of course activities. But all of this is done with Liz's schedule in mind. The numbers and kinds of different courses and their individual study characteristics depend on Liz's needs and her local opportunity and commitments. The choices also depend on the media array that Liz has at hand: a TV set that can bring Richmond's public channels 23 and 57, along with a variety of commercial signals, all through the local CATV system; an FM radio that can bring in directly WRFK-FM, Richmond's public radio facility; an audio cassette machine which VOLS has rented to Liz at a nominal fee; and those video cassette machines in the county library. Then, too, there are the U.S. mail and the Richmond Times Dispatch, the regional newspaper for the Crewe area. All of these delivery mechanisms, plus the WATS line, compose a comprehensive and flexible telecommunications system of state-wide dimensions. A system which connects Liz to the various instructional sources she needs, and does so in a way which is profoundly human as well as engagingly mechanical.

The system puts her in touch with people as well as mediated information sources. It allows for rich interactions as well as knowledge accesses.

Under the logistical management of her counselor, aided by the VOLS computer, Liz receives her instruction in various carefully scheduled ways. Certain basic courses which are needed by people all over the state most of the time are available on the non-commercial broadcast channels (seven TV and five radio) in Virginia. Such course areas might include Basic Composition, American and World History, American English and World Literature, and General Mathematics. Liz receives text and workbooks to use along with the broadcast lessons. She can make use of the WATS telephone line for tutorial accessing, and she indeed is allowed also to use audio cassette for sending back oral responses and questions. So that the instruction is not too narrowly focused on pencil and paper methods.

Public radio is used in a special management arrangement to relay administrative messages to categories of students at pre-arranged times each day and night. Messages or reminders about the things the learner should be doing. This cuts down on mailed memoranda and speeds up message delivery as well. Learners might, for example, be

alerted to mail in text order forms, or to the fact that a particular telecast lesson has had to be rescheduled for some pressing reason.

But broadcasting is by no means the principle method of instructional delivery. More frequently used are books, workbooks, and written instruments mailed directly to Liz, some to keep and some to return in due course. Also used are audio cassette lectures, presentations, and linear programs, used separately or in conjunction with printed goods or other media; video cassette presentations, including cinematized plays and actualities; and telephone conferences in which Liz can join with numbers of other students in an interchain situation. Newspaper articles are used as, or in lieu of, text elements. Commercial TV programs are used as resource content. Personal telephone calls from the counselor or from assigned course tutors or even from other learners help make classes a group experience. In special instances, lab kits are mailed to Liz to use according to instructions supplied in texts, by audio cassette, or by video cassette. (Incidentally, if there had been no video cassette machine in Liz's local library, the course handlers might have rented her a little super 8 cartridge film device which would have been used to deliver certain cinematized visual experiences.) Both the hard and the soft kind of long-playing phonograph records are also used, the latter often being bound into workbooks to be detached, used and then discarded.

Liz stays closely in contact with the course managers through written responses, worksheets mailed back, audio cassettes, personal and conference telephone calls, and sometimes even personal meetings with her counselor or course specialists at regional college locations. One of her courses requires that she actually spend some time in a special campus laboratory, because the facilities are not manageable in kit form. So for one semester, once a week, she has to drive to Longwood College at Farmville, but she manages, and the people in charge of VOLS, recognizing and respecting the difficulties she faces about travel and time away from the house and the attendant costs, make every reasonable effort to avoid assigning to her course experiences which would necessitate such travel and time commitment. Liz's skill objectives are carefully analyzed to eliminate the imposition of the merely traditional course structures. Travel requirements are cut to the bare bone, as are any other residency obligations. Yet nothing is done to impede proper academic standards. The control is found in the testing component. Liz's goals have been carefully objectified and the psychometric means of keeping track of her progress have been professionally designed and regularly

applied all through her open learning experience. If she tests out, no problem; if she doesn't (and occasionally she falls below acceptable performance levels), then the learning counselor and course managers must get their heads together and work with her to see what remedy is needed.

But artificial exposure requirements of the traditional residency cast are not allowed in the open learning system. Liz is never required simply to be present in some setting or other; she is tested, for baseline competence and moved forward to a testable growth by the most efficient means available, and that means the quickest, most direct, least expensive, and least time-consuming methods which can be reasonably devised and applied. Waste motion is largely eliminated, time commitments are determined by individual pacing results, not by administrative fiat. And the telephone, audio cassette, and written counseling contacts are very frequent, once a week or more often. This is made feasible because the counselors make heavy use of computer data storage to report on each student's progress, not having to memorize each student's file in detail. But even so, the relationship between learner and counselor is never merely mechanical. The learner is perceived as and treated as a special person with special needs.

And so, of course, in the maturity of time, Liz finishes her studies. Perhaps three or four years will have passed in the process. And her degree? Well, she wants to receive a degree from Longwood, although most of her work was taken outside that small institution. Under the Virginia Open Learning System Program, it is possible. Liz's achievement records are given to a committee of competent faculty people at Longwood for analysis and review. They recommend the granting of a Longwood baccalaureate degree in Library Science, a degree that reads differently on its face than would a diploma in the same discipline gained through traditional residency, but a degree that is every bit as academically valid and every bit as acceptable in the world of work, or with respect to graduate study. This is not to say that there are not still academic snobs who sneer at open learning, but about them, Liz worries not at all, nor does Librarian Walton, who promptly hires Liz as the trained children's reading specialist on his small staff. Under state law, he could not have done so without the degree validation of her competence in this special professional area, even at the relatively modest salary she will now make. And that, in brief, is the story of Liz Dabney in open learning in Virginia.

As I said, the story is almost entirely fictional, yet there were hard facts throughout. There is a Crewe, Va., and there is a Longwood College, and there are the basic telecommunications and media

elements on which we relied to connect Liz to the instruction she needed. And, to some extent at least, there are these two elements:

1. There are increasing course materials which can be facilitated through such media procedures as I have described. The University of Mid-America will be a primary source of such elements in the years to come, as will be Great Plains, AIT, EEN, PTL, Media 5, Dave Bell Associates and Time-Life. I do not foresee that any real substantial number of courses will actually be designed in Virginia, although some will be, and these will often be utilized elsewhere as well.
2. We do have in Virginia, at a happily increasing rate, higher education people who see and embrace the concepts and benefits of open learning. I anticipate that not too many years will pass before they will band together with those of us in the telecommunications sector and organize, establish, and operate the sort of comprehensive, flexible, and convenient open learning mechanism I dreamed up for the fictional Liz Dabney. It will be an open learning system that will relate to all state-supported institutions of higher learning and many of the private ones. It will also have many points of contact with other such systems in other states. It will make use of

the wide range of existing telecommunications media networks I have touched upon today, interfaced through an academic management system which will rationalize resource supply against highly individualized learner demand.

But notice one principle. For the most part, the various telecommunications systems and delivery mechanisms employed were not developed solely for and by an open learning enterprise. Instead, they exist for other purposes as well. They are simply utilized by an open learning management. This principle of facility and capacity sharing is infinitely wise, tremendously efficient, and splendidly synergistic, in the sense that technology helps us achieve **progressively more with relatively less**. An open learning telecommunications system is not discrete, but is time shared with public broadcasting, with the commercial media, with journalism, with common carrier and public service satellite services, and with many other media enterprises. That is what makes the concept technically and financially attractive and gives it an interrelating institutional vitality that would otherwise be lacking. We hope that when the University of Mid-America and JCET schedule a conference in the Old Dominion, we will be able to tell you what we have done to put the concept into actual practice, for it is an idea whose time has clearly come.



Kenneth L. Warren is director for course acquisitions of the University of Mid-America. In this position, he is responsible for identifying, evaluating, and acquiring existing media-based courses for inclusion in the UMA curriculum. Prior to joining UMA, Dr. Warren was the project director and executive producer for the GED instructional television series with Kentucky Educational Television Network. The GED Project designed and produced television programs to prepare adults to qualify for and pass the General Educational Development (GED) examination for a high school equivalency certificate. Dr. Warren has also served as the head of the instructional materials and educational services office of the Division of Continuing Education in the Oregon State System of Higher Education. He has also had wide experience in both educational and commercial broadcasting in Oregon. He has served on the board of directors of the National Association of Educational Broadcasters and was the chairman of the Instructional and Professional Services Division Advisory Board for that national professional association.

Some Realities of Course Acquisition

**Kenneth Warren
University of Mid-America**

It isn't easy to describe the realities of course acquisition at the University of Mid-America (UMA) in just under 20 minutes. I couldn't even list the difficulties and frustrations in 20 minutes. But, rather than continue in this negative frame of reference, I will try to mention a few positive things about the UMA course acquisition process and some of the things we've learned about identifying, evaluating, and acquiring course materials.

First of all, there is a UMA course acquisition process. It has evolved from proposal rhetoric, from funding agency constraints, from concessions to traditional academic requirements, and even a little bit from logical and rational consideration of factors that seem to be appropriate when you decide that about two-thirds to three-fourths of your course offerings from UMA are going to be acquired from existing materials.

Reduced to its simplest components, this course acquisition process consists of search; evaluation and selection; acquisition; and contract compliance. Expanded into operational realities, the process become more complex.

SEARCH—We try to cover every major source of potential college-level course materials. This effort includes a variety of indexes, catalogues, and inventories, as well as information from commercial producers of instructional materials. We also subscribe to the Robert Frost theory that "...Way leads on to way." That is, telephone calls and exchange of correspondence with institutional representatives around the country form a major portion of the search activity. Referrals, and information about who's doing what, and where, can often lead to the materials we're trying to find.

A brief digression here, to mention that we are trying to find materials corresponding to a priority list of some 55 courses and subject areas developed by the UMA Academic Council. The entries on this list provide some parameters to our inquiries. We also try to be alert for targets of opportunity — courses not specifically listed by the Academic Council but worthy of adoption on the basis of appeal, usefulness, and enrollment potential. This list of 55 is not all-inclusive.

The possibilities of adapting The Open University Foundations' courses for UMA offering are currently in the proposal stage with representatives of The Open University and the Exxon Education Foundation. Prospects appear favorable for developing a plan for use of Open University materials by UMA. We will probably use some of these courses this fall or early in 1976, to generate a background of experience with our particular audience of learners.

Another potential source of instructional courseware components for use by UMA stems from the cooperative working arrangement now in effect with Control Data Corporation, whereby consulting specialists in computer-assisted and computer-managed instruction will assist UMA course developers in designing and/or identifying PLATO programs appropriate for use with UMA courses. This activity shows promise of providing yet another media component to make the instruction available to the UMA learner even more efficient and effective.

EVALUATION AND SELECTION—At the risk of offering a list of steps (Maybe I should call it a procedural outline?), here's what we do in the evaluation and selection phase of course acquisition:

1. The UMA Academic Council decides what courses are to be offered, i.e., the basic list of 55 mentioned earlier. Or, as previously indicated, some courses may be suggested as the result of our inquiries about available existing materials.
2. Survey information about existing courses is matched with specifications about course development from the Academic Council. This information includes available data about the audience to be addressed, and the response that audience has made to the materials.
3. Information about existing courses is analyzed by the UMA Office of Course Acquisition. Syllabi, study guides, other media components, associated materials, and data relevant to instructional effectiveness are examined.
4. The course acquisition staff narrows the list of available courses according to such criteria as acquirability, content, and appropriateness for intended audience.
5. Preliminary examination of representative segments of potential acquired courses is made by UMA staff and selected field evaluators, based on an analytical scheme including content, appeal, appropriateness to target audience, and production and technical quality.
6. On the basis of outcomes from steps two through five, a review panel is established to conduct comprehensive evaluation of courses remaining for consideration. Besides appropriate UMA staff, the review panel includes academic subject area faculty from UMA and the nation, as well as instructional media experts.
7. Results of review panel deliberations determine whether acquisition will be carried out and to what extent modifications (adaptation) will be made in various components of the courses selected.

Those assigned to evaluate potential UMA course materials, beginning particularly at step five, have the assistance of program evaluation as an aid in systematically judging the various technical and academic elements of the courseware under consideration.

ACQUISITION—Following identification and evaluation of potential courses, UMA must seek to acquire desired courses. Acquisition is not accom-

plished simply, and experience to date leads to the conclusion that producers of courses which UMA will want to obtain have a variety of constraints, conditions of use, and terms of sale. Acquisition procedures vary from producer to producer, and sometimes even from course to course by the same producer. Basis for these variations stems from factors such as: whether the producing agency developed the course with the initial intent of offering it for other users; how much of the development costs the producer wants to recover; which geographical areas the producer wants to reserve; and what lease pricing policy the producer has devised (base fee plus per enrollment fee, or variations thereof).

These variables present difficulties when attempts are made to construct fixed-budget categories for course acquisition. This becomes especially apparent when per-student costs are included as part of the total acquisition outlay, simply because UMA is then forced to estimate enrollment (or at least project minimum enrollment levels) in determining the acquisition cost for a given course.

Limited distribution restrictions also impinge on acquisition cost estimates from the standpoint of attempting to develop a cost-income ratio for obtaining and offering a course. The narrower the distribution potential, the lower the income (cost offset) potential.

When considering the acquisition of courses, it is necessary to take into account a multitude of constraints, as indicated above. More specifically, the acquisition process can be seriously impeded, if not completely thwarted, by these constraints. At the very least, working around these constraints is a time-consuming process.

1. Treatment of content. The UMA review panel must be satisfied with the selection and sequencing of content and with the appropriateness of that content for the intended use of the course. This relates to granting credit and to the suitability of presentation for intended UMA enrollees.
2. Data on course use. There must be some information about how well the course accomplishes stated objectives: does it really help students learn, and learn to an acceptable level of achievement?
3. Multi-media components. The potential acquired course must be characterized by one or more professionally executed media elements, i.e., television, audio, print, film, computer, etc. This is in keeping with the UMA concept of providing

multiple avenues to learning and making most effective use of various media in the delivery of instruction.

4. Production and technical quality. Only the highest production and technical standards, corresponding with those required by similar national distributors of television and other media materials, are acceptable. Any submissions which fall below these standards cannot receive prolonged consideration.
5. Acquirability. The terms and conditions under which a course may be acquired must meet several criteria in order for UMA to consummate an acquisition:
 - A. Budget allocation. Some courses simply cost too much to permit acquisition by UMA, and still maintain a cost-effective ratio in keeping with sound fiscal management.
 - B. Modification. If the course is not usable intact, as is, but the review panel finds it acceptable on condition of modification (added components, revision of present elements), will the producer agree to such modification, and to what extent?
 - C. Copyright. Producer must indemnify UMA against any action for copyright or patent infringement, invasion of the rights of others, or any other action arising out of UMA's use of the course.
 - D. Duplication and distribution. Because of the multi-media approach to delivery, which may involve broadcast, closed circuit, audio-visual use, duplication or modification of video, print, audio, or other components, it is imperative that UMA be permitted to duplicate some or all of the course elements. Similarly, UMA must have permission to distribute course materials in keeping with the varied aspects of statewide delivery systems. UMA also seeks to obtain rights to distribute a given course or courses outside the instant consortium membership.

CONTRACT COMPLIANCE—This basically means paying your bills on time, but it occasionally involves a little more than that. Some producers base their leasing arrangements on a basic use fee, plus an amount per student enrolled. Most of them also want documentation of what you're doing with their materials in terms of duplication, distribution, and safeguarding against unauthorized use. Some have a royalty fee for copying, in

addition to basic use fees. And supporting records for enrollment figures must be available for inspection if requested.

SUMMARY—Courses investigated and sought for acquisition by UMA have to satisfy stringent criteria throughout the identification/evaluation/acquisition process. Of the more than 130 courses reviewed to date, three have become active UMA offerings. We expect to add another half-dozen or so this fall.

Reasons for courses not being accepted by UMA, or not available to UMA, relate directly to the five constraints cited above. One can easily imagine that, with a veritable plethora of media-based course production occurring at institutions throughout the country, there would be a cornucopia of materials from which to choose. But when high standards of content treatment, and production and technical quality, are applied; and when potential acquisitions come under close scrutiny for instructional effectiveness, such, unfortunately, is not the case.

Because of the above requirements, and strict quality control criteria, we have found a minimal amount of usable open learning college level course materials suitable for UMA acquisition.

Lest I end on a negative note (having begun that way), let me conclude in a hopeful, if not entirely positive, vein. Acquisition of courses for UMA offering is an essential part of the total UMA operational concept. To the extent that acquired courses can be obtained to fulfill UMA curricular needs, overall costs of developing the entire UMA curriculum can be reduced; needless replication of suitable extant courseware can be avoided; and cooperative as well as coordinative relationships can be established with institutions and instructional materials producers beyond the UMA boundaries, thus potentially broadening the impact and potential of the University of Mid-America.

We think it will work. We hope we can make it work.



David L. Bell is president of Dave Bell Associates, Inc., a Hollywood-based production company specializing in public service and educational programming. He has produced hundreds of films and television programs, winning two Emmy awards and dozens of film awards in the process. He is currently producer-host of a new teacher education film series, "New Approaches to High School Learning and Discipline," now in national syndication. Mr. Bell also supervises the distribution of another DBA series, *Medix*, now in markets covering more than 75 per cent of the country.

Exchange of Courseware on a National Level

**David L. Bell
Dave Bell Associates**

This session is about distribution, and I'm a producer.

I'm here to emphasize the relationship and importance we at Dave Bell Associates and Media Five recognize between production and distribution. The distributor of an educational series is, after all, in closer touch with the ultimate client, who in our case is almost always a teacher. We, the producers, hear from our clients. They tell us not only what they liked and didn't like about our programs, but better yet, they tell us what they want—what they need. That's the way our reading series got started. That's why we screwed our courage to the sticking post and are in the process of making a series about high schools. We actually went in unarmed and in some instances left our equipment lying around unguarded and didn't get a thing ripped off. Of course, we were filming "good" schools, as they say.

At any rate, because of the closeness between our production and our distribution, we are in a really unique position for television producers—we're in touch with our audience, and while that was rather scary at first, we've decided that we like it that way.

Teacher training films are not our only activity, incidentally. I wasn't able to be here yesterday because I was across the Potomac at the funny farm looking at our company's most recent epic: the first bicentennial film completed for a government agency. Who's the winner in the 200-year race? Would you believe the Postal Service? And, in addition to occasional films such as that, we produce two weekly public affairs series, one called *Brainworks*, a Sunday afternoon offering on the NBC station in Los Angeles, and a really good medical series called *Medix*, which is commercially syndicated and is currently in about 80 markets.

But the teacher training part of our production activity has become first priority for me personally. The guy at our office who produces *Medix* called it an obsession. I think what intrigues me about education is the enormity of the challenge.

It's not news that schools are in trouble. The Surgeon General, if he wanted a real challenge, wouldn't fiddle around investigating violence on television, he'd investigate violence in our schools. And, it's not the violence you occasionally read about. It's the violence that an ill-informed, unhappy, frustrated, fearful teacher does to the mind of a noisy, happy kid in kindergarten, or to a third-grader who's a slow reader, or to an eighth grader who doesn't see what's important about algebra, or to a junior who can't spell.

Even visiting the good schools, as we do, the trouble in education is all too evident. I read recently of archeologists in the year 2275 or so. They're digging around and they unearth this rather unusual building. It's in the middle of this big field, separated from the surrounding community. There's a tall fence around it. Inside there are desks facing the inner walls of rooms. There are locks and gray paint. It is, these archeologists decide from the available evidence, a prison for small people. We all know what they discovered and my social conscience is such that if I can, I'd like to have a hand in the change that will have to occur if public education is to survive. In an age of paradox, the saddest one to me is that education is filled with the best intentions—but it's turning sour.

Whenever our spirits sag we go visit Herb Kohl. A couple of weeks ago we were filming him and he told us a story to illustrate where he thinks education is today. Herb tells about the town where the people are the dumbest people in the entire country. They all seem to be in this town. In the middle of

this town is a huge mountain of debris from the town's only factory. Every year the mountain gets higher and higher and every year more kids climb it, fall off it, and break things—like their backs, and their necks, and their heads. The town elders are trying to figure out what it is they're going to do to save their children. What they decide they're going to do is build a hospital at the bottom of the mountain.

That, Herb says, is the story of education. He reminded us that even in the so-called "good" schools, it's more comfortable to have regularity, order, and control instead of creativity, spontaneity, and freedom.

Herb wrote *The Open Classroom and Reading: How to*, plus lots of other good books, and is one of our "regulars." He was in *Human Relations and School Discipline* and *Teaching Children to Read*, and will be showing up in *New Approaches to High School Learning and Discipline*. Herb is a teacher, author, critic, parent. He is thought, in some circles, to be a radical. We balance Herb's viewpoint with others, such as those of Charles Silberman, Thomas Harris, Thomas Gordon, William Glasser, and Sid Simon. Others on our faculty include: John Holt, James Herndon, Lee Salk, Mario Fantini, Lilian Weber, Madeline Hunter, Richard Armour, Dorothy Strickland, Vivian Windley, Postman and Weingartner, and lots of others, including dozens of damn good classroom teachers.

Not only do these experts become our stars, they also become our advisors. It's no surprise to any of you that we, as educational producers, suffer from the educational malaise known as "It can't be any good 'cause I didn't think of it." We try to end run such unthinking rejection of the courses we produce by incorporating into every course all of the popular authorities in the field of whom anyone has heard, and a few who we consider to be up-and-coming. We still lose out to department chairmen and other academic fossils from time to time, but it doesn't raise my blood pressure anymore because I'm a firm believer that in the end quality will win, and besides, there's another accrediting college just down the pike.

Those of you who've seen our teacher-training films know that, in addition to "experts," we travel around the country shooting documentary footage in good schools. We do animation and will, in fact, do anything that makes the point we want to make. Both geographically and intellectually, we strive to be national in our scope. (We might attempt to be global, but we haven't established our Arab connection as yet!!!)

If it seems strange to some folks that a commercial organization is a leading producer of teacher training courses, well, it sometimes seems a little

unusual to us too. We're the only company in Los Angeles which makes its living producing public affairs materials, not only for educational distribution, but commercial as well. In fact, we are the only independent production company ever allowed to produce a public affairs program for the CBS-owned station in Los Angeles. So maybe producing materials which gets us to a place like this isn't so strange after all. We like it and we're good at it. Besides, we're part of the diversity which seems to be a desired goal not only of open education but of education generally.

One of Bill Glasser's favorite stories illustrates the value of diversity and openness, I think. It's about this kid who's in a ninth-grade science class, and he's kind of looking out the window, and his mind is off somewhere. He's a good student, he's smart and everything, but he's just not with it today. The teacher notices this, and the teacher's giving a lecture on barometers, how a barometer works and all that, and the kid is just looking out the window. The teacher calls on him and says, "Mr. Martin, would you please come up to the front of the class and explain to the class how, by using this barometer, you would be able to figure out how tall this school building is?"

Now, Mr. Martin doesn't have any idea what a barometer is or how it works or anything about it, but, being a good student, he runs right up in front of the class and holds up the barometer. "Well," he says, "I'd go up on the roof."

The teacher says, "Um-hum."

"And I'd take a string and I'd tie it to the barometer and I'd lower it over the side and I'd measure the string."

The teacher says, "No, Mr. Martin, you've failed. Sit down."

The kid says, "Well, I want another chance. I know what I'd do. I'd get a stopwatch from the coach, and I'd go back up on the roof and I'd drop the barometer, and I'd start the watch and I'd hear it hit and I'd stop the watch and I'd use the acceleration formulas and I could tell you how tall the building was."

The teacher says, "No, you've failed. Sit down."

The kid says, "Wait a minute, I know. Now I know. I would take the barometer out in front on the sidewalk."

She says, "Yeh."

"I'd set it up."

"Yeh."

"I would measure the height of the barometer, and measure the length the shadow cast, measure the length of the shadow of the building and I could figure it out by algebra."

She says, "No, no."

The kid says, "Give me another chance. I'll tell you what. I'd go down in the basement to the custodian's room, and I'd open the door and I'd say, 'Hey, I'll give you this nifty barometer if you tell me how tall the building is!'"

There are a lot of ways to do almost anything, and one of the most enjoyable things to me is discovering new ones.



James E. Thompson is president of Media Five Film Distributors, a division of Dave Bell Associates, Inc. In this capacity he is responsible for the nationwide distribution of four teacher training telecourses which to date have enrolled over 40,000 teachers. Prior to his appointment to Media Five, Mr. Thompson was an Emmy award winning producer of public service television series with over 200 programs to his credit.

Exchange of Courseware on a National Level

**James Thompson
Media Five Film Distributors**

The success of Media Five's television distribution is directly related to what I call two support areas: one academic, and the other logistic. Under the academic support headline you would list course approval by the institution of record, appointment of a course instructor, possible alteration in Media Five's course design by the accrediting institution, course administration, evaluation and grading of the final papers or examinations, and issuance of a final grade.

We realize that the ultimate responsibility for these decisions must rest with the crediting college. Therefore, Media Five offers potential crediting colleges a number of different alternatives in course administration. To credit one of our courses, a college does not have to accept our course design. It can add to or subtract from our course requirements. Although our course design is predicated on 30 hours of coursework for two semester hours, and

is in itself academically sound, our objective is to involve the college, to accept input from its faculty and administration, and to arrive at a successful course offering which pleases both the college and Media Five. About half of the colleges accept our course design as presented, with the balance of the institutions altering it in some way or another.

Media Five's Televised Studies Division came into existence in the summer of 1973, when Media Five acquired the rights to two television courses owned by Dr. William Glaser's Education Training Center. When Educator Training Center began nationwide distribution with its two courses in 1971, they did so with one crediting institution, Laverne College in California. At that time, 1971, they met with an expected amount of resistance on the part of the more traditional, well-established (and mainly state) institutions. Now, only four short years later, Media Five has a list of about 60 crediting colleges across the country.

In addition to the colleges like Laverne, Media Five also has courses being offered through the University of Wisconsin, the University of Georgia, Northern Illinois University, Western Michigan University, etc. None of the four I just mentioned offer the courses in exactly the same way. Each has arrived at its own academic plan, acceptable to its faculty and administration. Media Five's first role with regard to the academics of television course distribution is one of flexibility.

In terms of the second support area, logistics, we have taken a more firm stand. In many cases, agencies or institutions have launched in the nationwide distribution of television courses with the academic flexibility that I mentioned. However, in the logistic area they also look to the crediting or leasing institution. Here is where Media Five differs in its approach to distribution. For support in the academic side of the course offering, Media Five looks to the crediting college. However, the responsibility for logistical support is retained, in most cases, by Media Five.

Under logistical support are listed air-time negotiations with the broadcasting stations, preparation and distribution of promotional flyers, coordination of on-air publicity, film or tape shipping, course registration, mailing of study materials, and maintenance of accurate enrollment records. In connection with all of the above, Media Five offers and prefers to handle these. If a college does opt to handle all or some of the logistical responsibilities, Media Five reserves the right to approve what the college plans to do.

Perhaps the most crucial aspect of a course offering revolves around promotion. All too often a college or university reluctantly tests the waters of television courses by leasing a telecourse package

and listing it in its catalogue, taking a couple of newspaper ads, and then sitting back and waiting for the enrollments to roll in. Unfortunately, television courses seldom sell themselves.

The educational marketplace is extremely competitive. Teachers in Los Angeles, for instance, have literally hundreds of different in-service offerings from which to choose. For a television course to be successful, then, an enormous promotional campaign must be mounted so that a sufficient number of potential enrollees can be reached.

Nationwide last year, Media Five distributed more than one million flyers announcing our courses. To date, over 40,000 teachers have enrolled in our courses. Enrollment for the fall semester is projected between 8 and 10 thousand. Of these, more than half will be enrolled directly through the televised studies division of Media Five.

The Media Five Televised Studies Division, under the supervision of a staff CPA, is capable of handling over 6,000 enrollees per semester. Under this registration option, televised studies receives the enrollment and application either directly from the student or via the crediting college. Once received, the registrations are alphabetized, checks or Master Charge recorded on cash receipts journal, and revenue is deposited in the college account. Televised Studies maintains a separate bank account for each crediting college. A form confirming the enrollment and acknowledging receipt of the course fee is prepared, and course material airmailed back to the student. This procedure is handled on a same-day basis. Applications are received, processed, and study materials mailed all in one day.

During the sixth week of broadcast, Televised Studies then prepares an alphabetized roster of enrollees for each crediting college. Each enrollee is assigned a student number. Two copies of the enrollment confirmation form which Media Five prepares is then shipped to the college, along with the original enrollment application, both bearing the student's number. Along with this is sent a check for the college's share of the course fees.

Media Five is able to handle a significant part of the registration. This eases the burden of a new college that is perhaps not set up to handle a large number of enrollees. Many colleges, like UC in Berkeley, are set up to handle thousands and thousands of registrations, but many smaller colleges aren't.

The efficient handling of a course registration is essential to institutions that hope to offer television courses in on-going phases. For many stu-

dents, this might be their very first TV enrollment, and they must have the assurance that they have enrolled in a viable course offering. Waiting three weeks to receive course materials will, of course, raise a few doubts on the part of the student.

Our concern about registration efficiency is matched with our concern for the implementation of an effective evaluation system. Students should receive their grades not later than three weeks after submitting their final papers.

Media Five offers credit in colleges, an option under which an independent non-profit organization in Los Angeles will evaluate and submit a recommended grade to the crediting college. The papers are forwarded to the crediting college after this pre-evaluating process for review by their faculty and issuance of a final grade.

Also, upon request, Media Five will supply the crediting college with an evaluation model to aid their faculty members in evaluating the students' papers. Also, the mere grading of a student's paper is in itself not acceptable. We feel that every student's paper should be returned with comments from the reader; comments we believe should be positive, praising for a point well made, or constructive, noting where a student has a deficiency and needs to do further work to receive credit.

In summary, it is not Media Five's objective to sell or lease a college a television course, wish the buyer good luck, then step into the background. For this reason, Media Five seldom sells or leases

outright. Our lease fees are normally on a per-enrollee basis. It is, then, to our advantage to create interest in the course and gather as many enrollees as possible. Also, it is to our advantage that every student have a positive feeling about all aspects of the course, from promotion through grading of the final paper, because next semester we'll probably be offering a new course to that person again.

If a TV course fails for a college, many times they'll have other courses, other extension programs, to make up the difference. Media Five does not have that luxury. Therefore, whatever the contract, whatever the arrangement, Media Five must do its best to see that every course offering is as successful as possible. In that way, Media Five has much in common with the crediting institution. That is, you're only as good as your past reputation.

Happily, Media Five courses have been well accepted by teachers—over 40,000 enrolled, as I said. We have a 2 per cent withdrawal rate and 95 per cent to 98 per cent completion rate.

Media Five's challenge is now the same as that facing any other institution. That simply is to satisfy the faculty and administration while offering a good course. If there is a secret to success of our production company, as Dave Bell explained it, it is that we believe that education should be both rewarding and enjoyable. The teachers seem to agree with us, and that perhaps is one of the reasons for the success of the distribution as well.



August DeJong is administrative coordinator of the Consortium for Community College Television, a position he holds with the Office of the Los Angeles County Superintendent of Schools. In this position, his concerns reach into structure, distribution, and production of college-level course materials.

Exchange of Courseware on a National Level

**August DeJong
Los Angeles Consortium of Community Colleges**

When I was asked to discuss exchange of courseware on a national basis, I was happy to accept for two very practical reasons.

First, we're always searching for courses. We are searching for more and more, even though we're producing more courses than we did in the past. We have air time available to us in southern California. We have about 10 stations that provide us either with free public service air time or with paid time. We've had cable companies interested in working with us, some of them pretty reasonably. So we're searching for courses.

Second, we're looking for ways to get front end production money. It's expensive to do things in television, as everyone who's touched it knows.

The length of the course that we find most useful for us is 30 half-hour programs for a two-unit course and 45 for a three-unit course. That may not

be the best way to look at televised instruction, but we've found it most useful to this point. I realize there are colleges within our system that disagree with that point of view and are working hard at changing it, but it's been most practical up to this point.

Programs need to meet commercial broadcast standards. That is to say, for example, they need to be on two-inch high band videotape; they need to be produced in that format to meet quality standards which commercial broadcasters will accept. We meet those standards because we get air time from some commercial broadcasters free, and we like that. If we produce a program and they say they won't air it, we've got a problem. We're going to have to buy air time from someone who will accept it. I'd rather get air time free by producing programs the broadcasters will accept.

The television programs must be only one component of an integrated teaching-learning system. Much of that has been discussed, so I won't expand on it very much except to say that our format includes the program, a syllabus which is a detailed student learning guide, if you will, meant to help the student through a lot of things; two tests: a mid-term and a final; supplementary activities such as teachers in the individual colleges might require; plus, in most cases, a standard college text used with the course.

Courses must have academic respectability, even though that's hard to define and pretty hard to come by sometimes. They must also have administrative good sense, which is something I hesitate to talk about. But, if you can't work the course the way somebody's packaged it for one reason or another, it may cost you a lot of money to do it over.

If a television-based college credit course appears to meet most, if not all, of the foregoing qualifications, then the Southern California Consortium for Community College Television is interested in looking at it as a potential offering for students of its member colleges.

I want to expedite an exchange of programs. Naturally, any course would need to be available at reasonable cost. We think \$100 per half-hour program use fee is a reasonable cost, with the user paying costs of dubbing on a user's tape in addition to that use fee. Let me emphasize, that is the use fee. It is separate from dubbing costs and tape stock. If people don't have tape stock, you've got to double that price, approximately. We can't buy tape stock for everybody in the country if they want to use our programs. You've got to invest a little bit of tape stock yourself to get the thing moving, if you don't have a start in the business already. So you must put a little money at the front end yourself to

even get into this game. But, for single colleges, not cooperating with other people, not pooling some money and resources, we think this is reasonable. If you want to get into the business, and you don't have the production capability yourselves, then we think you ought to be able to get into the business of using good television-based courses for about \$5,000 plus tape dubbing costs.

Obviously, we've never been able to recover our production costs on that basis. This certainly appears to be a non-profit pricing structure, which it must be for us, for the community colleges.

The primary purpose of our consortium's coming together was, and still is, to make possible the production and airing of quality college credit telecourses at reasonable cost to our member institutions. The 36 colleges in our group have registered 100,000 students, about 60 per cent of whom have finished the courses since 1970.

Sir Walter Perry identified cost-effectiveness and academic acceptance as two essential elements for success. Samuel Gould underlined academic acceptance with an expression something like, "A strategy for assurance of quality is crucial to the success of open learning." Cost-effectiveness means to me that something has been worth doing for the dollars spent. It's getting what you went after for the money that you think it was worth. Academic acceptance means what it says, I guess. The problem is that some people reject what other people accept. So I think we're going to keep on with that question; I don't think there's an end to it. Quality can be defined more clearly than cost-effectiveness if one thinks in terms of objectives and pre-established criteria against which programs can be produced, carried out, and evaluated. We are headed in that direction with our productions.

We think we're cost-effective. We think that we're producing something that's acceptable. We've survived for a while. I'm not suggesting that the 11 courses we've produced are the best courses in the country. We're working at the job I've been discussing.

I'd like to offer one other suggestion to people who might be interested in looking at these kinds of questions with the Southern California Consortium a bit more deeply. First, I've suggested a reasonable price for exchange of programs among cooperating institutions around the country. Second, regarding that front end money question which bothers everybody in this business, I would like to entertain with other people around the country the notion that perhaps some people would like to put front end lease money, at the rate of about \$5,000 per institution, with an institution

such as ours, with the notion that if you put in that \$5,000, you get free lease use of the programs for something like three years. Let us say, then, that we got a total of \$125,000 together per course out of 25 institutions. I think that's a reasonable figure for production of a two or three-unit course. Now,

you can go as high as \$3 million or you can go down to \$50,000, as you've heard some people saying. I agree, you can do different things in different ways, but if you give us \$125,000, we'll produce a two or three-unit course that will have academic acceptance and meet commercial broadcast standards.

Research & Evaluation Patterns

This conference theme focused on the emerging patterns seen in the findings of research into and evaluation of open learning and nontraditional study.



Dennis D. Gooler is director of research and evaluation for the University of Mid-America. He was formerly on the faculty of Syracuse University, including two years as chairman of the Department of Instructional Technology. Dr. Gooler received his B.S. degree in English from the University of Minnesota in 1965, following which he taught high school for two years. He has advanced degrees in curriculum from the University of Minnesota and in educational psychology from the University of Illinois.

Criteria for Determining Success in Open Learning Systems

**Dennis D. Gooler
University of Mid-America**

It is reasonable and important at any time to inquire into the worth or value of social or educational programs, particularly those programs which expend public monies. These inquiries become increasingly important as the economic philosophy of a society moves from an add-on (create more) philosophy to a redistribution of finite resources (make do with what we have) philosophy. There are only so many resources available to accomplish the myriad of programs or services that are desirable to at least some segment of society. If a new or different program is desired, support for that program must be obtained at the expense or exclusion of some other program or programs. The relative worth of the intentions or goals of any proposed program must thus be carefully examined before decisions are made to support the program. So, too, must the success of a selected program in meeting its goals be carefully evaluated to justify further support or improvement of that program.

There are numerous difficulties associated with both determining the worth of intentions, and the success with which those intentions are realized. One of the primary difficulties is that not everyone holds the same view of what is of worth, or, indeed, of what constitutes success. Further, there is often disagreement as to what should even be considered in seeking to determine success in an educational program.

Innovations are amenable to considerable evaluation. New programs are called upon to justify their intentions and their success to an extent far greater than existing programs or institutions. It is interesting to speculate as to what would happen if the measures of success demanded of new programs were also demanded of existing programs. The burden of proof lies heavily on new programs.

As innovations, open learning or nontraditional study programs are subject to questions of value and success, both posed by multiple publics. Each of these publics has a different idea about worth and success. The intent of this paper is to describe a variety of ways in which success in open learning programs might be thought about. It may be important for the proposers and implementers of such programs to be consciously aware of the variety of ways judgments will be made about their programs.

Following a brief section on terminology, ways of conceptually thinking about criteria for determining success in open learning and nontraditional study programs are set forth.

Terminology

Three terms used in the title of this paper require definition. Criteria, as used in this paper, refer to the dimensions according to which an educational program might be examined. The Random House dictionary defines a criterion as "an established rule or principle for testing anything."

There are many dimensions according to which any object or program might be tested or examined. For example, a book might be judged on: the quality of its printing; the longevity of its binding; the accuracy of its content; its ability to motivate, interest, or excite; its use rate in a local library. Each of these dimensions represents a way of judging that book—each is thus a criterion for assessment.

Criteria may be distinguished from standards and indicators. Standards are benchmarks of acceptability or excellence. They define how much and/or what kind of something is adequate. For purposes of judgment, specific standards must be developed for each criterion. Thus, in the previous

example, a standard for acceptable use rate might be established as three different people checking out the book during a month's time. Standards may be empirically derived, may be established by authority, or may be obtained as a function of comparing one program to another. Different people may hold different standards relative to any given criterion.

Indicators are what is accepted as evidence of the actual status of a program or product with respect to a given criterion. Thus, an indicator of use rate of a library book is the card which records check-outs of the book.

The process of determining the success of a program, then, consists of deciding which criteria to use, gathering evidence on the status of the program on those criteria, and comparing status to standard. Such a process is far from simple, due in part to the difficulty of clearly defining criteria, standards, or indicators.

Success is defined as "the favorable or prosperous termination of attempts or endeavors." To succeed, according to the Random House dictionary, is "to accomplish what is attempted or intended; to happen or terminate according to desire; have the desired result." Success, thus, has to do with favorable judgments being rendered according to the process outlined above.

One of the most difficult aspects of determining success lies in the summary or aggregation of separate judgments. The definitions above give clues to this difficulty: it may be possible to accomplish what was attempted or intended, but not with a desired result. Unexpected or unintended outcomes may occur en route to accomplishing intentions. On balance, such unintended outcomes, if they are negative, may outweigh the positive value of intended outcomes, the net result being a judgment of unsuccessful.

It is also difficult to adequately define **open learning systems** or **nontraditional study programs**. Most often, these terms are used to describe programs which seek to offer educational services to new kinds of clientele, delivered in new or unusual ways, emphasizing flexibility through amelioration of normal time/space constraints, and possibly featuring different credentialing or crediting patterns.

Such programs have taken many forms. Some of the better known examples include Empire State College, University Without Walls programs, the Open University of the United Kingdom, and the University of Mid-America.

Given these brief definitions of terms, it is possible to move to a discussion of criteria useful in

determining success in open learning programs. The attempt here is to describe a range of possible criteria, not to prescribe those which must be employed. Furthermore, this paper does not directly deal with issues of standards or indicators. These issues must be dealt with in a subsequent paper.

Criteria for Determining Success

Criteria for determining the success of open learning or nontraditional study programs may be grouped into a number of categories. A variety of criteria might be defined within each category, depending on which aspect of the category a particular group or individual wishes to feature. The categories include:

Access

Many open learning programs take as their *raison d'être* the extension of access to post-secondary educational opportunities to groups or individuals heretofore denied such access. There is, in short, a new clientele to serve, which existing institutions cannot or will not serve.

The issue of access is a complicated one. It involves discussing whether reasonable access to post-secondary education is a right or a privilege, whether opportunities for education should be a function of the chances of geographic location, age, sex, race, or physical condition, and whether equality of access is positively correlated with equality in acquisition of social benefits. While these issues are far from being settled, the broad criterion of access is one that will be considered by most people rendering judgments on open learning programs. The access criterion may be stated as:

1. To what extent and in what ways does a given open learning program in fact extend or expand access to post-secondary educational opportunities?

There are a number of ways to elaborate on this criterion. For example, expanding access must surely include making opportunities available to more kinds of people. Minority groups come to mind quickly. In addition, however, are kinds of people not usually thought of as being a minority, but who normally are not well served by existing institutions. These kinds of people include senior citizens, people in penal institutions, those physically bedridden or unable to leave home, young prodigies, etc. Included in this group might be those people living in places where post-secondary institutions or programs simply do not exist.

Another way to think about access is to think in terms of how many—that is, access means providing a service to greater numbers of people than is

presently possible. A commitment to mass higher or post-secondary education has not been articulated as clearly as the commitments to mass elementary/secondary education, but such a commitment cannot be far off. Evidence concerning numbers of persons served by a program will be utilized by some in making judgments on the criterion of access.

Access can be thought of as more than merely claiming that certain services are available. If those services are not made available in a form that can be dealt with by people, then availability alone may not satisfy the criterion of access. In some cases, this may mean delivering the services at a time or in a place accessible to the target population. In other instances, access may mean providing prerequisite remediation for program participants so they can effectively utilize available services. The point here is that a consideration of access may involve investigating the conditions of access, those factors which may make access a reality instead of a theoretical idea.

Evaluation of open learning programs according to access criteria implies to some an examination of the extent to which a program contributes to equality of educational opportunity. Access and equality of opportunity are thus considered synonymous. Such interpretations fail to reflect a growing realization that equality of opportunity is not adequately defined simply as giving members of minority groups increased access to facilities, teachers, or other resources. If those groups do not subsequently achieve in a manner likely to increase their competitive capabilities in the social marketplace, then, according to one point of view, equality of opportunity has not been realized. Thus, for open learning programs like the University of Mid-America, success in providing for adults access to courses in their homes is not a sufficient condition for arguing that the University has provided for greater equality of opportunity. At the same time, however, it might be argued that such a program is addressing the issue of access.

To sum: Those who wish to define success in terms of access criteria raise questions such as the following: Who is this program intended to serve? Are those people appropriate recipients of the intended service? Are those people not now being served? How many potential participants exist? And, as the program is implemented, questions of intentions become questions of fact: Who was served? How many? Where?

Many open learning programs face considerable political opposition or suspicion from existing post-secondary institutions with regard to this access question. College and university faculty and administration worry about students (often

thought of as FTE's) being taken away from the campus. Unless open learning programs are viewed as a legitimate outreach function of an institution, thereby contributing revenue to that institution, those programs are viewed by faculty and administration as a direct threat. Gathering data on learner characteristics is thus of critical importance to open learning programs. The dilemma is a critical one: if open learning programs do not involve people uncharacteristic of typical college or university populations, the credibility of these programs, on the criterion of access, is minimal. At the same time, however, open learning programs are supposed to be just that—open.

Relevancy to Needs and Expectations

A second criterion for determining success in open learning programs concerns the relevancy of the program. The criterion might be stated as:

- 2. To what extent does the program provide opportunities and services that are regarded to be of priority to communities in general, or to specific individuals?**

Judgments of an open learning program made according to this criterion involve determining the extent to which needs or desires have been adequately described, and the extent to which the program reflects those needs. It is possible to develop a program which appears to be well-organized, but deals with content or issues of no interest to anyone. Simply put, this criterion asks whether the program in question addressed needs or expectations thought important.

Several observations may be made about the use of this criterion to determine success. First, the history of needs assessment efforts suggests that collecting information about needs does not always yield good prescriptions about what must be done to meet those needs. While it may be possible to articulate at a general level an appropriate relationship between an expressed need and a program response, the specifics of that program response are often more difficult to define. It is not always easy to examine a program's activities and subsequently make judgments about the relevancy of that program to identified priority needs.

Second, this criterion is difficult to employ because different groups have different views of what is needed or desirable. Consequently, the same program may be simultaneously judged both successful and unsuccessful. If a working consensus can be reached as to some common priority needs or desires, then this criterion can be used to gather aggregate judgments of success. If not, then individual judgments must stand alone.

The presence of multiple publics underscores a need to consider pluralistic purposes of open

learning programs. It may be necessary to profile the needs and expectations of various interested publics, and to ask which of these profiles can be satisfied by a given program. Some programs may be able to meet the needs of a significant number of groups, while other programs can satisfy but a few profiles. A clear statement is important from program personnel as to the focus of the program, and, therefore, what kinds of needs are likely to be addressed.

Third, relevancy is not static. Needs and interests change over time, and thus the substance of this criterion will change. This particularly affects the standards used in judging a program on this criterion.

Quality of Program Offerings

Some people will render judgments about the success of an open learning program by examining only its products, or by examining the means by which those products came into being. For example, some audiences will determine the success of the University of Mid-America by looking at the materials developed for each of its courses. Furthermore, some people may even make that judgment by looking at only one component of a course, such as the textbook, or audio tapes, or television. This criterion for determining success may be stated as:

- 3. To what extent do the processes and products of the program appear to be of high quality?**

The essence of this criterion lies in the determination of something called quality of product. Quality is a complex issue, as Robert Pirsig has so nicely described in his fascinating book, *Zen and the Art of Motorcycle Maintenance*. Here again, quality means different things to different people, thus making this criterion susceptible to differences in application.

There are a number of interesting ways in which this criterion might be applied. One way is to consider the general acceptability or face validity of a product or process. That is, does the product look right? Does it appear to be good? In making these judgments, the observer of the product or process takes many things into account, and arrives at a single judgment of acceptable and unacceptable. This judgment may be based on an in-depth study of the product, or on a superficial look at the product. The producer of the product often thinks that the observer has not taken everything into account that should be taken. Nonetheless, a judgment of success or lack of success is rendered based on whatever analysis an observer cares to make. The face validity question is an extremely important one. In many instances, if a program does not look "right," the observer or evaluator will go no further in thinking about the

program. First impressions may be lasting impressions.

It is possible to subdivide this general acceptability criterion into a number of distinct issues which might be taken into account in making one aggregate judgment of success. For example, a product may be assessed according to its technical/production quality. That is, are the video portions of the television program of high quality? Are the camera angles proper, is the color right, do the scenes flow together nicely, or has the editing been well done? Similarly, judgments might be made on the basis of audio quality, or on the basis of layout of print upon a page, illustrations utilized, etc. This technical quality is in some respects a matter of individual taste, but there are certain standards which appear to govern production quality. If technical or production quality is not adequate, then the observer may not wish to inquire any further about the program or materials.

This presents an interesting dilemma in the case of open learning or nontraditional programs. One of the reasons these programs are nontraditional is that they try new approaches to technique. In many instances, it may be necessary to educate people as to how quality is assessed with respect to new kinds of technical approaches. Judgments may often be made because the technical or production aspects of a product do not look like other products that the observer is familiar with. If an open learning program bases its production decisions strictly on historical precedence, then new techniques or approaches will not be tried.

Another way of judging quality of program offerings is to examine the logic of products, and to ask whether that logic is appropriate and accurate. For example, the observer may wish to examine products in terms of the apparent match of the products or program to learner needs. If, on the surface, the products do not appear to be related in any meaningful way to the needs of the learners for whom they are intended, those products might be judged to be unsuccessful.

Similarly, an examination might be made of the extent to which the content included in a product is both adequate and appropriate. In many areas of study, the content may not be agreed upon or well established. An example might be a course under development at the University of Mid-America, entitled "The Cultural History of the Great Plains." There are many views about what ought to be included in such a course. A given product; in this case a course, might be judged by people according to whether they believe the content finally included in the course is the right content, and whether it is factually accurate.

Another way to look at the logic of products is to examine both the scope and sequence of the product. If things do not appear to be ordered correctly, and/or if the product contains too much or too little content, the product might be judged unsuccessful. Again, questions of scope and sequence are questions susceptible to individual judgments, based on experience and preferences.

Finally, the logic of products might be examined in terms of the assumptions underlying those products. For example, a product might be examined in light of the assumptions it makes about how adults learn. If those assumptions appear to the observer to be blatantly incorrect, the product might be judged unsuccessful. If, on the other hand, the assumptions apparent in the materials meet the particular biases of the evaluator, then that product might be determined successful.

Yet another way of looking at program offerings is to examine the development processes whereby those offerings were created. This examination, of course, must proceed on the basis of data accompanying the product or the course which describes how those products were created. Different people have different views about how products ought to be developed. For example, someone might raise questions as to whether the product was developed in response to some assessment of needs. Or an examination might be made as to whether the product or course was developed according to a systematic instructional development process, including appropriate feedback from tests of the product as it was being developed.

There are a variety of instructional development models extant in the literature, and being utilized in various development centers. While these models differ somewhat one from another, there are some common threads which run through all models. The evaluator may wish to determine whether those important threads in instructional design and production were present as the particular product or course being evaluated was developed.

Finally, questions about quality of program offerings may center about the ease with which or likelihood that the products or courses can be successfully delivered to the people for whom they are intended. If it does not appear that the product can be delivered to the intended target population, in the kind of setting the evaluator finds himself, then that product may be judged unlikely to be successful. If, on the other hand, the product includes defensible provisions for its delivery, then a judgment of success may be rendered.

The question of delivery is an important problem in most open learning and nontraditional study

programs. Because these programs often are directed at unique populations, there are attendant delivery problems. Open learning products or courses, in order to have face validity, must include provisions for the delivery of the products.

Most originators of open learning programs decry attempts made to judge their programs on a single criterion. Nonetheless, such judgments are made. Most often those judgments are made on the basis of the perceived quality of the program offering. If that quality is not regarded as acceptable, then the program may undergo negative reviews, even before data about learner outcomes are available.

Learner Outcomes

While the apparent quality of materials or processes is important in judging the success of an open learning program, perhaps of even greater importance is a determination of the extent to which learner outcomes resulting from involvement in the program are satisfactory. This criterion might be stated as:

4. Who learns or experiences what, and with what consequences?

A distinction is drawn here between learning and experience. This seems particularly appropriate for open learning programs, since many of these programs stress the value of a learner's experiencing almost as highly as a learner's learning something specific. Opinion will always be divided on this issue, of course. In its simplest form, it is a distinction between process and outcome. Some people feel that the act of engaging in a learning experience is as important as the final outcome of that experience. Others hold that the process is irrelevant, that what really matters is the final product or outcome. There is room for both points of view in determining the success of an open learning program.

Utilization of this criterion might involve examining some specific questions. First question: Who learns or experiences what was intended in the program? Most open learning programs, and any other kinds of educational or social programs, include statements by the developers of the program of intentions for the learners or participants. These intentions may be stated very minutely and behaviorally, or they may be stated more generally as goals or objectives. In any case, it is hoped or intended that learners either will experience something in particular, or achieve certain ends.

The assessment of learner outcomes has been the historical focus of evaluation efforts. It could hardly be denied that attention to acquisition of prespecified goals or objectives is an important task. In determining the success of an open learn-

ing program, much attention must be given to the extent to which stated goals were indeed achieved. Equally important, as was pointed out previously, might be an examination of the worth and value of those goals in the first place.

This question also assumed that different people learn different things. It may be important in determining the success of an open learning program to know which of the enrolled participants actually achieve what was intended. A program might be devised with a particular learner population in mind. That intended population may not achieve at all well, while some other populations who also participated in the program might achieve what was intended. It is important to understand the characteristics of those who achieve as well as the characteristics of those who do not. It may be difficult, if not unwise, to make blanket statements about learners and what they learn.

It is also important to point out that intentions for a program emanate from several sources, not the least of which is from program participants. While it is important to understand the extent to which participants achieved goals set by program developers, it may also be important to understand the extent to which learners achieved goals they had set for themselves. Most open learning programs serve a population which is not captive. Adults vote with their feet. If their own goals are not being satisfied, they will drop out of a program. In many respects, retention of people in courses and other experiences provides an indication of how well personal goals are being met.

A second related question has to do with what else was learned in addition to those things which were intended. In most learning experiences, there are unintended or unanticipated outcomes that accrue to participation in the program. Many times these unintended outcomes may be more significant than intended outcomes. It is important in judging the success of an open learning program to understand the range of unintended outcomes that do occur.

The idea of unintended outcomes is sometimes interpreted as a negative; that is, unintended outcomes are negative outcomes. It also is possible, however, that unintended outcomes which occur may be very positive, and may bring a credibility and level of success to the program that might not have been otherwise achieved.

A third subquestion might be stated as: How do people feel about their experience? Educators have been criticized by some as being interested only in the cognitive development of learners, not in their overall personality. This subquestion focuses on the attitudinal or emotional aspects of an educational enterprise. It may be extremely important

to understand whether learners achieved a positive attitude toward the course, and their involvement in it, or whether they emerged from the program feeling negatively about post-secondary education and about themselves. It is difficult, and perhaps not fruitful, to argue about a distinct differentiation between affective and cognitive matters. There is merit in collecting data about both. It would be as inappropriate to look only at what learners cognitively learned from an experience. A mix is important. Different people place different weights on cognitive or affective outcomes in their attempts to determine the success of an open learning program. Whatever the weighting, it would seem important to somehow take both aspects of learning into account.

Finally, it may be important to determine the long-term effects, it is quite another thing to actually determine those effects. Longitudinal studies are expensive and, by definition, cannot provide information which will not become evident until a later time. Some of these long-term effects may, in fact, be the more important outcomes to consider.

While it is easy to advocate an examination of long-term effects, it is quite another to actually determine those effects. Longitudinal studies are expensive and, by definition, cannot provide information for a significant period of time. This fact, however, should not preclude open learning programs from allowing for and supporting the notion of some longitudinal studies of longer-term learner outcomes.

Cost-Effectiveness

The paramount criterion utilized by many people to determine the success of an open learning program concerns cost. The criterion may be stated as:

5. Is the program cost-effective?

To some, this criterion implies the comparison of the program in question to other programs. Other people take this criterion to mean that the cost incurred in the development and operation of a program can be justified in terms of the outcomes of the program. Comparisons to other programs are not necessary, but rather justification is found in an intuitive or absolute evaluation of the relation of cost to effectiveness.

For the same reasons that evaluation is being mandated and carried out, so too is cost-effectiveness a critical concern. Given finite resources, the best use of those resources must be found. The issues of how much a program costs, and what effectiveness it achieves, are therefore central in the minds of most people when judging the success of an educational program.

Utilization of this criterion generally applies examination of two factors: the comparability of costs, and the comparability of effectiveness. In many instances, only the cost factor will be examined. Here, people will look for how much an open learning program costs in terms of what other similar nontraditional programs, or traditional programs, cost. This involves making a determination of unit cost; that is, how much does the program cost per student participating? Armed with this information, evaluators may seek similar information from traditional institutions, and compare per student costs. If an open learning program costs considerably more per student, then that program may be judged to be unsuccessful, according to this criterion.

The difficulty with any cost analysis is arriving at decisions about what is to be included as a part of the cost of a program. Different institutions utilize different cost accounting schemes. For example, an open learning program which relies heavily on technology may incur significant development costs, but virtually no facilities cost. A traditional institution, on the other hand, has significant physical plants to maintain, but may incur less course or materials development costs. The direct comparison of unit costs across programs is thus made difficult because of inconsistencies in cost accounting. While this is not the place for a detailed analysis of the difficulties of cost analysis and cost comparison, it is important to point out that, if this criterion is used to judge success, it must be used with a great deal of caution.

Similar cautions must also be raised about the determination of effectiveness. As has been pointed out consistently throughout this paper, different people have different views of what constitutes effectiveness. Thus, a valid comparison of effectiveness measures across programs or institutions is difficult to obtain. In addition, there is always confusion as to the difference between effectiveness and efficiency, or effectiveness and benefit. The problem of comparison of effectiveness becomes particularly acute when attempts are made to compare the effectiveness of one program, which has one set of intentions, with another program, which has a different set of intentions. The "comparison of apples and oranges" argument is always relevant here.

Yet another difficulty with this criterion is the problem of matching or relating cost to effectiveness. Drawing the relationship between cost and effectiveness does not appear to be a simple act. Since cost analysis schemes vary, and since effectiveness measures are not consistent, the relationship of cost to effectiveness, and any subsequent comparison of that relationship across programs, is tenuous. As a result, most people utilizing this

criterion tend to utilize cost comparison data only in their judgments of success, rather than the comparison of ratios of cost to effectiveness across programs.

In many respects, this criterion ought to be one of the more straight-forward criterion to be utilized in judging success. After all, it should be possible to account for what is spent in the development and operation of a program, to divide that cost by the number of participants, and to arrive at a single index of unit cost. The same procedures could be used in any program, thus making costs comparable. Unfortunately, things don't work out that easily in practice.

Some substantial work is going forward on this difficult issue of cost-effectiveness. Empire State College, for example, has a grant to develop a cost-effectiveness scheme for open learning and nontraditional study programs. Philip Doughty at Syracuse University has been developing a model of cost-effectiveness for competency-based teacher education programs. Other agencies, such as Rand, have been working to develop schemes as well. These models should be extremely helpful in implementing this criterion of cost and effectiveness.

Institutional Impact

The success of any given program might be judged in terms of the impact that program has on other institutions or programs. People who are interested in utilizing this criterion regard the ripple effects of a nontraditional or open learning program to be a significant factor in judging the success of that program. The criterion might be stated as:

6. To what extent, and in what ways, has the program influenced the policies and directions of other programs, institutions, or agencies?

Examination of this criterion involves looking at five possible kinds of impact that an open learning program might have on other institutions or agencies.

First, one might seek to determine the impact of an open learning program on the perceived mission of other institutions in the state or region in which the open learning program operates. Because the open learning program reaches out for new clientele, in new ways, other institutions faced with decreasing enrollments and increasing costs may reconsider their own activities and their own directions. There is considerable pressure to find new clientele, and to provide university or college services to those clientele. If an open learning program achieves a degree of success, and gains either acceptance or notice from other institutions, those

institutions may regard the open learning program as providing a model direction for some of their own activities. Thus, one might look to see whether existing state education institutions put new emphasis on outreach programs, on continuing professional education, or on educational services for such groups as senior citizens.

Similarly, examination might be made of the research priorities of an existing institution. An open learning program might influence those research priorities by pointing up whole new areas of inquiry which have heretofore not been considered important.

A second kind of impact concerns instructional practices in other educational institutions. Most open learning programs are striving to identify new ways of providing quality instruction. These explorations involve experiments in technology, utilization of different arrangements of content, etc. If an open learning program causes re-examination of instructional strategies in existing institutions, then that open learning program would, according to this criterion, be judged successful. Here again, the realities of the present situation in post-secondary education may cause professors to re-examine the way they are teaching their courses, the techniques they use, the media they employ, their arrangement of content. Open learning programs may well compete with existing institutions for students. If open learning programs are able to provide instruction in a manner that is acceptable to students, those students may opt to engage in learning through nontraditional means, as opposed to what they regard as inferior or less interesting instruction available from other institutions.

This is not intended to imply in any way that the instruction in existing institutions is of no value. Such is hardly the case. Those people utilizing the criterion of institutional impact, however, will look for signs that willingness to experiment with different instructional strategies becomes more prevalent, or that funding agencies are more inclined to support experimental teaching strategies. Such influence may not be felt in the short term, but must be looked for over a longer time perspective. Instructional practices do not change overnight. However, over a period of years, some noticeable differences in instructional patterns might be discerned.

A third indicator of institutional impact might be an inclination among institutions to move toward more consortial/cooperative program efforts. For example, a university system in a state might be more inclined to work with state colleges to formulate a statewide outreach program. Willingness to do this may have been influenced by the existence of an open learning program in that

state, which surfaced needs for a more coordinated outreach effort.

Consortial arrangements are often formed to achieve economies of scale. Open learning programs, particularly those that are technology-based, incur heavy development costs. Most states or regions will need to engage in consortial efforts to develop significant open learning programs, since few states are able to handle such programs with their own resources. Thus, the formation of more consortia dedicated to providing unique kinds of instruction would be an indicator of the institutional impact of an open learning program.

A fourth way of looking at institutional impact is to examine the internal administrative policies of existing institutions. Most open learning programs seek to remove some of the artificial time and space limitations inherent in semesters, buildings, and regular meeting times for classes. This kind of flexibility may find its way into existing institutional policies, particularly those policies governing registration, crediting, providing credit for life experience, etc.

For example, an institution might change its registration policies to allow for a process of continuous registration, where people can start courses at different times. Such policies are often the mainstays of open learning programs, but are rarely found in existing institutions.

Similarly, institutions may engage more heavily in credit for experience. The Regents External Degree Program in New York State, as well as Empire State College, have been leaders in this area, and have influenced administrative policies in other existing institutions. Administrative problems can often cause innovative instructional practices to fail. If satisfactory arrangements cannot be made for differential entry points into the system, and for progressing at different rates, then it is difficult to realize instructional flexibility.

Finally, institutional impact may be assessed in terms of the internal reward structures for faculty and administrators in existing institutions or agencies. In many institutions, there are few rewards for creative or experimental teaching, or for thinking about ways of reaching new clientele. If an institution, upon examining the mission and practice of an open learning program, decides that it, too, needs to achieve greater flexibility in its own programs, the institution might decide this is to be done by altering the reward structure for faculty. Thus, faculty members might be given released time, or some financial resources, to work on the development of new kinds of course materials.

Not all institutions or agencies will be, nor necessarily should be, influenced by an open learn-

ing program. Many institutions are carrying out their important mission in an effective manner, and ought not to change their emphases to be more like an open learning program. There are subtle improvements that can occur, however, in most institutions. If an open learning program is done right, that program may well become a prototype for other institutions or, perhaps more importantly and realistically, some aspects of an open learning program may be seen as appropriate for use in an existing institution. It is these subtle, smaller kinds of improvements that may really spell success for an open learning program, as defined by this criterion.

Consequences

The success of an open learning or nontraditional study program might be judged not solely according to its intentions, but according to its consequences. This criterion might be stated as:

7. What are the short and the long-range consequences of the existence of open learning or nontraditional study programs for institutional/political policies, for individual capabilities and priorities, and for broad social values or policies?

The previous section on institutional impact outlined some of the possible consequences of an open learning program on existing institutional practices and policies. In terms of such policy, a broader political consequence may also be felt. This concerns the financing of post-secondary education. It is possible that an open learning program might cause legislatures and others to rethink the basis for funding post-secondary education within a state or within a region. For example, questions may be raised about providing state appropriations for participants enrolled in non-credit courses. Or some new thinking may be done about financing the educational activities of part-time students. One of the outstanding features of most open learning systems is the enrollment of a great many part-time students. In many states, those students are not eligible for scholarships or financial aid of any kind. The consequences of a major open learning program would be the enrollment of a great number of these part-time students, thus creating a political press for re-examination of financing policies concerning part-time studies.

Other institutional or political consequences might be ascertained over time. Some of these consequences are likely to be positive, while others are negative. Presumably, those positive consequences which occur would lead to a judgment of success for an open learning program.

There are at least three kinds of consequences that might accrue to an individual participating in

an open learning program. First, that individual might undergo changes in his or her attitude toward learning. Such changes in attitude may have implications for how people think about their jobs, possibilities of changing or improving their occupational status, the use of leisure time, etc. Many individuals do not feel they have the capability to succeed in formal learning experiences. Successful attempts to engage in learning through an open learning program may change attitudes, and may make individuals more inclined to engage in further educational experiences. If the admonitions of the increased leisure time are accurate, people are more and more going to need to know how to deal with that time. One of the positive consequences of involvement in an open learning program might be to enhance one's ability to creatively use leisure time.

Some open learning programs are aimed at recurrent education, particularly for those people who need to change occupational patterns in mid-career. Many of these people cannot leave their present occupations to attend school full-time, and thus find open learning programs to be tailored to their educational needs. If, as a result of this increased flexibility in learning, individuals are more confident in their capacity to improve themselves occupationally, a positive consequence will have been obtained.

Individuals engaging in open learning programs may also develop greater political and economic sophistication. Such sophistication may eventually have consequences for local governments, and for the social and political establishment in given communities. As people become more educated, and more positive in their ability to learn and to interpret, they may exhibit different behaviors with respect to the governments of their community. For example, a sophisticated consumer may have an impact on the retailing structure of a community or region. Again, it is unlikely that open learning programs in and of themselves are going to produce massive changes in this area, but, if one takes a view of incrementalism as a viable form of social change, then the small changes that occur in each individual may aggregate together to result in major social, political, and economic consequences.

Finally, and perhaps most importantly, involvement in open learning programs may have consequences for the overall view an individual has of himself. An individual may gain more confidence in himself as a result of success in open learning programs. This kind of success may carry over into other areas of personal life. Changes in self-image are important changes, and need to be taken into

account in evaluating the success of an open learning program.

An open learning program may also have impact on the value structures and priorities of society at large. That is, implementation of open learning programs, and subsequent study of those programs, may bring about changes in other social efforts, such as health care programs or poverty-oriented programs. Open learning programs could serve as a model for the delivery of social services, and could thus have consequences for delivering non-educational services as well. It is in this area that development of indicators is so important. Indicators are designed to enable policy makers to monitor the pulse of the system, to ascertain changes or trends over time. It may be extremely important to understand the consequences of open learning or nontraditional study programs on the thinking about and development of broad social policies.

More specifically, the existence of open learning programs may have an impact on the premises which underlie the educational system in society. What happens during the course of an open learning program may cause a re-examination of our assumptions about how adults learn, who wants to learn, what they want to learn, and the ways in which they learn best. It certainly may have consequences for priorities among the resources devoted to education. As the general age level of the population increases, more and more attention will be given to the educational needs of adults, including senior citizens. Open learning programs may open a new frontier of thought, with resulting examinations of the assumptions and premises that undergrid our educational system.

These are not easy things to ascertain. Evaluation of consequences, both in the short term, and perhaps more importantly, second order consequences over a longer term, are essential measures, but extraordinarily elusive. Most educational programs, including open learning programs, tend to be caught up in the day-to-day press of activities, and worry little about overall consequences resulting from the existence of the program. Such thinking is being altered to some extent. An indicator of the awareness of the need to examine second order consequences is the establishment of an Office of Technology Assessment in the executive branch of government, whose mission it is to study possible second order consequences resulting from any kind of human enterprise, including the delivery of social services.

Generation of Knowledge

Much attention must be given to the goals, processes, and outcomes of an open learning program

if one is to determine the success of that program. There is also a need to determine the extent to which any program contributes to a greater understanding of the phenomenon being addressed by the program. This criterion might be stated as:

8. To what extent does the program contribute knowledge useful to a better understanding of the problems, issues, and practices of the field?

Those who utilize this criterion believe that a successful program is one which contributes to the general state of understanding of a phenomenon. Open learning programs, for example, might be expected to contribute new understandings of the nature of the adult population, of the utilization of new instructional technologies, or of the consequences and impacts of operating such programs. In a sense, this generation of knowledge criterion cuts across all of the previous criteria.

Those interested in this criterion of success may have expectations that knowledge may be generated in at least four ways. First, success of a program might be judged by the adequacy of the recording of experience of and judgments about that program. Of particular importance here is the gathering of data that describes in some detail how things were done, why they were done, and with what results. For example, careful documentation of attempts at needs assessment might help people better understand the process of gathering data about needs, and the potential utility of having such information. Similar study and documentation might be made of the various instructional development processes used in a program, the delivery mechanisms employed, and the outcomes achieved. The assumption here is that it is important to document such things, for in such documentation can be found clues to improvement upon those processes in subsequent programs. A gathering of judgments about a program may also be useful in this documentation effort. How people felt about what was going on is critical data, and may help in generally understanding the phenomenon being experimented with. Few programs adequately document what they do. The press of day-to-day business makes it difficult to be reflective or analytical about what is being done, or even to record a history of events and purposes.

Second, a program might be expected to engage in systematic variations and subsequent analysis. While this smacks of experimentation, such experimentation might be thought of in terms more broadly than traditional experimental design. For example, at the University of Mid-America, it might be reasonable to systematically vary the approach

used in a television component, to determine which approach seems to work best.

If an open learning program is to engage in such systematic variation and analysis, it must have a strong commitment to research and evaluation. Not all programs can afford such commitment. Those who would utilize this criterion for judging success, however, will look to the results of careful and thoughtful research and evaluation conducted within and about the project, to determine the extent to which that work contributes to a general understanding of the phenomenon of open learning.

The generation of knowledge might also involve the kind of long-term indicator study which has been alluded to previously. Of great importance is the determination of which indicators are appropriate, and how they are to be monitored. In many respects, continuous monitoring of these indicators provides extremely important generalizable knowledge about the educational program in operation. Without such a long-term study, a thoughtful analysis of the benefits and limitations of programs of open learning or nontraditional study will be very difficult to make.

All of the preceding points presume a kind of descriptive, fact-oriented knowledge. It may be as important for a project to develop articulate hypotheses as it is to test out those hypotheses. Continuous, active inquiry is one of the hallmarks of open learning programs. Learners are encouraged to be curious, to be active in their pursuit of new understanding about themselves and about their world. So, too, ought a program be encouraged to engage in new ways of examining itself, to develop hypotheses, and wherever possible, to test out those hypotheses. Knowledge is not made up exclusively of that which is known for certain, but also that which is hypothesized. A part of the success of an open learning program may therefore rest on its capacity to generate intelligent hypotheses about itself and its impact.

Summary

Open learning or nontraditional study programs, like any new educational or social programs, are susceptible to considerable formal and informal evaluations directed at determining the success of those programs. There are numerous kinds of criteria whereby judgments of success or failure may be rendered, including:

1. To what extent and in what ways does a given open learning program in fact extend or expand access to post-secondary educational opportunities?

2. To what extent does the program provide opportunities and services that are regarded to be of priority to communities in general, or to communities in general, or to specific individuals?
3. To what extent do the processes and products of the program appear to be of high quality?
4. Who learns or experiences what, and with what consequences?
5. Is the program cost-effective?
6. To what extent, and in what ways, has the program influenced the policies and directions of other programs, institutions, or agencies?
7. What are the short and the long-range consequences of the existence of open learning or nontraditional study programs for institutional/political policies, for individual capabilities and priorities, and for broad social values or policies?

8. To what extent does the program contribute knowledge useful to a better understanding of the problems, issues, and practices of the field?

Different people will emphasize some of these kinds of criteria more than others. A single program may thus be evaluated differently, depending on who does the evaluation, and what criteria he features.

This paper represents only a first step in a process of conceptualizing the bases upon which policy is established concerning provision of postsecondary education opportunities and benefits to adults. It remains to dialogue about the adequacy of the above categories, to define more clearly the specifics of each category, to determine useful and appropriate standards and indicators, and to commit resources to a thoughtful analysis of the success of open learning programs. Evaluating new programs, particularly in terms of the benefits deriving from those programs, is no easy task. We must get started.



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Research, the Future, and Open Learning

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There are three basic things I would like to discuss. First, I want to look at the National Institute of Education's (NIE) present involvement in open learning and nontraditional study. Second, I want to take a dim and uncertain, but nonetheless compelling, view of the future of education within what I see as some of the realities of the rest of the 20th century. Then I want to discuss at least in part where we stand, and where we could go, in research and development activities related to open learning, and its alter-ego, non-traditional study, at the post-secondary level.

I. Developments in Open Learning

A very distinguished figure in American higher education recently described the National Institute of Education as a "rich agency." As the

Eastern Europeans would say to that: "If you don't have a fish, a crab is a fish." NIE is not rich, and much of what it has in funds is already committed to ongoing projects of various kinds, a fact that limits almost to zero the number of new projects that our agency can fund. And agencies traditionally are known for the wealth of their innovations and frontiersmanship even more than for the grand total of their appropriations, so we must pick and choose our way very carefully. Some of our present investments in open learning are small. We are funding studies at the elementary and secondary school levels that compare the effects of traditional and open classroom settings on the students' behavior, attitudes, and skills development. We have also funded the recently-completed Open Learning Seminar Series, which brought together over a period of eight months recognized scholars and practitioners to discuss various aspects of open learning at the post-secondary level.

The largest open learning investment by the National Institute of Education is in the University of Mid-America. It is a direct response to the demand for more and different kinds of learning in the United States, which can be illustrated by some compelling statistics. By 1972, an estimated 40 million adults were engaged in part-time learning. There were 12 million adults who had started but not completed college. Increases in enrollments and costs at traditional post-secondary institutions were steady, often dramatic. And statistics continued to suggest a clear relationship between level of learning and income. These figures suggested there was a need and demand for more education, much of which could not be provided by traditional education institutions. The University of Mid-America was but one answer to that need.

The University of Mid-America is an experimental and developmental project that has two basic purposes:

1. to explore the degree to which an "open" post-secondary system can increase access to post-secondary education while maintaining quality and keeping costs as low as possible.
2. to establish an actual operating system so as to be able to judge the effectiveness of various characteristics of open learning, ranging from a multi-media-based pedagogy to evaluation schemes and cost-benefit or cost-effectiveness factors.

To pose its purposes in the form of a question, if an open learning system is established, and:

1. offers adults the kind of education they want and need;
2. uses all the resources of television, audio cassettes, print, film, recordings, radio, and telephone possible to create pedagogically sound and attractive course materials;
3. carries those courses into the home by mail and by the media;
4. provides nearby learning centers staffed and equipped to support the learner;
5. lets the learner proceed at his own pace,

will that system attract and hold a sufficient number of adult learners to justify itself financially and educationally as a nontraditional form of post-secondary education in the United States?

In other words, the hypothesis to be tested is the model itself. A further question is this: If it is successful, will the system as a model, and the materials it has produced, be useful and adaptable to other states or regions of this country?

Prior Experience

Media-based open learning projects at the post-secondary level have been tried since the early 1950's. Virtually all of them are now defunct. The reasons for their failure to take hold are often complex, but one or more of the following were contributing factors: an inadequate assessment of adult needs; an inadequate response to those needs; insufficient support services; resistance from traditional institutions; an inability to estimate or an unwillingness to supply the sizable start-up costs and break-in period needed to make the project work. Of all the noted open learning projects, the TV College of Chicago has survived, albeit under the specific conditions, as proof that there are many adults ready to commit themselves to a media-based learning experience. But no project has yet been set up to test under the best conditions possible the extent to which this model of an open learning system can succeed in servicing those adults who cannot or will not be serviced by the traditional colleges and universities. This is not to be taken as a failing on the part of the traditional system. The question is whether we have enough adults (who want more than what they can presently get in order to improve themselves, their skills, or their own marketability) to call for an alternative system that can give them what they need.

History of the Project

In late 1971, the U.S. Office of Education awarded the University of Nebraska a small grant to begin planning an open learning system for the State of Nebraska. The name given to the project

was State University of Nebraska (SUN). The concept of an open learning system as presented by Nebraska agreed almost wholly with the following set of characteristics that had come to be viewed by educators as essential to a real test:

1. There must be a significant number of adults who want more education than they are receiving or can receive, and they must be able to specify what kinds of educational experience they want.
2. The "more" of education will include both the traditional courses for credit and courses for job and personal skills development.
3. Instead of bringing adults to campus, the system will save them time, energy, and money by carrying education to the adults and supporting them with nearby learning centers.
4. An open learning system will allow the learner to work at his own pace, to use all possible media to deliver and sustain the educational experience, and will reduce (or abolish) the traditional prerequisites to admission, while keeping the cost the same as or lower than the cost of taking a campus-based course.
5. A true test will demand an actual operating system.
6. An open learning system must try to strike a balance between real and social costs so as to justify its existence.

The Office of Education recognized that Nebraska presented a unique opportunity for such a system. It has a large land mass, and a large rural population having problems of access. Its public television system covers more than 90 per cent of the population with a broadcast-quality signal, and portions of contiguous states as well, with extensive opportunities for interconnections and relays.

It has a statewide public university system not only committed to testing out the feasibility of an open learning system as an alternative to itself, but one that has direct connection with the public television system. It has a multi-media production and dissemination center that ranks among the best in the country, and is also connected with the university system. The University itself has strong connection with the Mid-America State Universities Association, whose members are actively interested in open learning. Finally, the University was willing to commit resources of its own to the project.

The planning grant called for four basic activities: (1) to identify the kinds and numbers of potential students; (2) to develop criteria and pro-

cedures by which non-formal educational experiences could be evaluated for credit; (3) to discuss interconnection with other public and private agencies, institutions, organizations, and networks; and (4) to study the problems connected with the establishment and operation of learning centers.

Encouraged by the results, which showed 2 per cent of the adult population interested in taking courses under the conditions described, and dozens of commitments from both state and out-of-state institutions, the Office of Education gave further planning grants in FY 1973, and the Clark Foundation gave a large grant to:

1. review existing open learning projects that do not use the media, and other nontraditional post-secondary projects and institutions, in order to gain their collective wisdom, and to develop a structural model;
2. design, produce, and field test pilot multi-media segments of a course that surveys indicate as high in popularity, using different settings and population;
3. establish a library of materials on open learning and make it available to all interested parties;
4. develop model course materials to complement the television segments;
5. conduct one or more market research surveys of the adult population of Nebraska and other states, including both urban and rural areas, to determine more precisely the number and kinds of learners and courses;
6. conduct research comparing various media formats for qualities of attracting, holding, and teaching/retention.

Results

The results of these planning/developmental activities showed that ideas on "open" post-secondary learning were being developed in various parts of the country, and a survey of 1,455 colleges and universities, as well as a survey of the literature on the subject, suggested a wide range of ideas for SUN. Two different regional market surveys conducted indicated a consistent 1.5 to 2 percent of the adult population were interested, and showed that there were at least 15 separate adult learner groups to be taken into account. A dozen different instructional formats for the television segments of the courses were developed and field-tested, revealing several major conclusions about audience responses and preferences. Several structural models were developed, the whole question of copyright was put under study, and dozens of existing

course materials from all over the country were identified and imported for review as to future adaptation and use.

Transfer and Re-Examination

In the spring of 1973, the SUN project was transferred to the National Institute of Education, which gave the project a continuation grant for the last six months of the year while the Institute studied the project. During this period, work was continued on assessing learner preferences, varying the mediated delivery modes, materials testing, regional planning, and the requirements for accreditation.

In the fall, as a result of a site team visit to the project and discussions with consultants, the SUN project submitted to NIE a proposal for further planning of an open learning system with several new dimensions. Due to the fact that the adult population of Nebraska was only 925,000, a conservative estimate of adult participation no longer promised to produce income anywhere near consonant with necessary expenditures. The proposal therefore included the possibility of neighboring states joining in a consortium, an idea that SUN had already been exploring. The proposal also shifted the proposed curricula from an exclusive emphasis on college-credit courses to a balance between college credit courses and general interest, job-related, and skills-development offerings. The role of television in course programming, with its attendant high costs, was also reduced in favor of using less expensive media mixes in order to get more courses for the same expenditure.

The proposal was reviewed and accepted, and a final planning and development grant was awarded for Calendar Year 1974 in order to do the following:

1. plan the complete curriculum and procedures for admission, credentialing, and testing;
2. develop, experiment with, and field test four different modes of courseware using different media and thus having variable costs;
3. develop a consortium arrangement with institutions in several Midwest states;
4. develop a prototype learning center;
5. develop a model for any adaptations of existing, usable courseware;
6. develop and experiment with two multi-media courses on a public basis;
7. develop alternative ways of funding courses;
8. develop full formative and summative evaluation plans;
9. further refine the research priorities;
10. form national consultative and advisory bodies;

11. develop a plan for, and begin studying the cost-effectiveness and cost-benefits factors of, the system and the materials;
12. develop a five-year operations plan with income/expense projections that are based on all planning.

During the 1974 grant period, several noteworthy events occurred. The National Endowment for the Humanities gave the project grants to plan for and begin production of a course new to post-secondary education—the Cultural History of the Great Plains. And Kansas State University, the University of Kansas, the University of Missouri, Iowa State University, and the University of Nebraska joined in forming the University of Mid-America as successor to SUN, thereby opening up the system to an adult population to about nine million. With its own board of trustees, academic council, and various national councils of advisors, the University of Mid-America will set curriculum priorities for the entire four-state consortium, produce the courseware, and conduct research and evaluations. Each state will have its own delivery system; the Nebraska delivery system retains the name of the State University of Nebraska. The UMA will not grant credit or degrees. Credit and degrees will be offered through the individual state delivery systems, which take responsibility for admissions, record-keeping, support centers, etc. UMA is therefore a coordinating body empowered to receive monies to do those things for the system, like courseware production, that would be too costly for individual states.

The submission in late fall of 1974 of its five-year proposal coincided with the beginning of a two-month experimental period for UMA, in which the completed Accounting course and an adapted Psychology course were offered to a limited number of adults in Nebraska. The purposes of this experiment were to (a) test the system itself in microcosm; (b) do the first "real" field test of courseware; (c) further refine the demographics of the learner populations; and (d) begin to define more precisely a realistic ratio between those adults expressing interest and those who actually enroll and persevere. A total of 681 adults enrolled.

Accomplishments in 1974

In 1974 the SUN project staff did in fact create a regionally-based consortium; developed and field-tested two full courses using a variety of mediated materials in each; developed and began work on a research agenda that included formative materials, research and evaluation, research on students, the media, and learning behaviors; developed the final stage of an evaluation process for use in all future field testing; developed enrollment projections;

completed a 20-step instructional design process for use in all courseware production; developed an economic model; surveyed the capacity of all four states to deliver courseware; completed the courseware acquisition process; decided on a 55-course curriculum, with priorities established; developed a series of advisory groups and panels to assist with various aspects of UMA and its delivery system in each state; laid out a five-year operations and funding plan by source of income and by category of expense; and experimented with the public delivery of two courses, including the operation of a learning center and a survey of all enrollees.

The Proposal

The FY 1975 proposal included a request for multi-year funding to do the following:

1. tasks related to the development of a curriculum and the creation, production, and evaluation of all courseware;
2. tasks related to the operation, effectiveness and feasibility of the system;
3. tasks related to the analysis and comparison of cost factors;
4. tasks related to research studies and evaluation;
5. tasks related to the dissemination of courseware and findings.

In the light of NIE's financial limitations, an initial one-year award was made in order to begin to test the system for its educational, financial, and operational effectiveness and feasibility. Further funds are anticipated within budgetary discretion.

By the end of a two-year period, the project will have been subjected to an extended external evaluation, with the expectation that it will have produced evidence that the courses offered are of sufficient quantity and quality to attract a reasonable percentage of the adult populations who can be reached by the delivery systems operating in the states involved (a number yet unknown). The evidence must also suggest that an increase in the number and variety of courses will attract an equivalent increase in learners, with the promise of a minimal cost-effectiveness ratio to be established at approximately the end of the five-year grant period. Correlative data indicating general effectiveness with the adult learners being served, including objective measures of success and subjective measures of learner satisfaction, must also be produced. Finally, the marketability of the courseware outside the regional area and any growth in the consortium itself to expand the system must be demonstrable in terms of educational and financial effects, as must concomitant local and private support growth.

You can look at a project like the University of Mid-America from a number of different perspectives. You can see it as a response to a problem: in this case, access to post-secondary educational opportunity. You can see it as a new kind of institution: a regional consortium that includes five state university systems, a coordinated set of state-based delivery services, cooperative course materials production, and even a wide data base. You can see it as an experiment, testing to see whether this particular set of materials and services in the aggregate will be able to attract and hold sufficient numbers of adult learners to be both educationally and economically viable. You can see it as a research and evaluation effort, designed to find out much more than we know about adults, (their educational needs, preferences, learning styles, etc.); about the complex phenomenon of interaction between adults and various media; and about the structuring and costs of these educational services.

Naturally, you will find many similarities between the University of Mid-America and other forms of nontraditional study and open learning. It is media-based. It has an open admissions policy. It is designed to save learners time, energy, and money by carrying education to them. It uses some course materials produced elsewhere. It reinforces and supplements learning through learning centers. It offers the learner complete flexibility in pacing. It surveys learner needs; offers both credit and non-credit courses, and uses formative evaluation to monitor its own performance. It includes an ongoing research plan related both to the parts and to the whole project.

However, there are some significant differences between the University of Mid-America and other forms of experiments in open learning. First, the University of Mid-America's basic purpose as an education delivery system is to help adults learn in their homes. While learning centers are provided, and their use encouraged, the course materials and the learning experience itself are structured for use in the home. Part of the University of Mid-America research program is therefore given to the study of actual learners' and potential learners' habits, needs, lifestyles, and problems, and to the degree of effectiveness of the various media used. This information is then used by the course development teams and the State University of Nebraska delivery system coordinator to improve performance, services, and effect.

Second, the University of Mid-America grants no degrees. It offers credit through its affiliated universities. As a separate entity, the University of Mid-America maintains a central interstate staff to develop the curriculum, all course materials, and the guidelines for all learner support services. Un-

like most other open learning projects, it does not offer courses principally as a conduit to traditional or campus-based courses or degree programs, but rather as a set of responses to regional educational needs it has identified over time by using various research techniques.

Third, because it is regional, its responsibility is towards urban, suburban, and rural adults. It does not serve a restricted clientele.

Fourth, it does not assume a high level of motivation among its actual or its potential learners. Materials and services are designed accordingly.

Fifth, the University of Mid-America's Office of Research and Evaluation has a comprehensive and energetic plan for open learning. Its major purposes are two. The first is to accumulate and use present knowledge, and to produce new knowledge about adults' learning needs, styles, and preferences, about the comparability of teaching and learning effectiveness of various media, and about cost factors related to individuals, processes, and the project as a whole. The second is to develop and use formative and summative evaluation techniques to assess outcomes of the various project sectors. Both research and evaluation are well underway, and a good deal of new knowledge has already been produced.

Sixth, unlike traditional learners, adults do not fit into any one neat, concise description; they represent many different sets of potential learners. They are basically a number of different sub-groups of the population, with varying needs, varying personal situations, varying motivations. The University of Mid-America recognizes that such human diversity calls for new and flexible educational approaches. Their instructional development team is designed to meet this challenge by integrating content, curriculum, testing, media, research, and production specialists, all of whom work closely together from the earliest stage of inception through courseware development and implementation. This team begins with the recognition that if the University of Mid-America wants to attract and hold these adult learners, it cannot make the mistake so many other open learning projects have made in relying heavily on traditional teaching methods, or in merely duplicating traditional classrooms. Their task is to create new learning packages composed of interdependent multi-media course components, which in turn can be delivered by a variety of alternate delivery systems. Some learners will use only some of the components; some learners will use all. The key is to design courseware to permit, indeed encourage, the learners to seek the most accessible and effective way(s) for themselves.

Seventh, the University of Mid-America is not only media-based; but multi-media reliant. A central focus of the project is to find out whether the use of many media within each set of course materials will make a measurable difference in attracting and holding learners. The use of media other than print is exceptionally intensive, and serves as the basis for major studies underway in the Office of Research and Evaluation.

Eighth, its present operating delivery system, State University of Nebraska, commands very wide access to the public broadcasting network, at all hours of the day and night. It therefore can use public mass media on a scale and on a schedule appropriate to the learner's needs and to the project's goals.

Ninth, the regional consortium not only permits a wide level of resource and data aggregation, but also allows for the production of materials that respond to regional interests, such as the forthcoming course on pesticides, and materials that can find more national audiences, such as the problems of the consumer.

Tenth, and perhaps most crucial, is the difference in scale and intensity. The University of Mid-America is a test of an alternative system. It is more than a collection of innovations. It is different because of the size of the access problem it is trying to solve, because of the audience(s) it is after, because of the financial feasibility, economics of scale, and economic self-sufficiency questions it faces, and because of the intensively multi-media learning experiences it offers at the very local level.

II. Possibilities in the Future

Now let us turn to the scenario of the future. First, we have to recognize that we are in a period of transition in what represents legitimate education of adults. This phenomenon is about six or seven years old. We are moving from a very limited view of what represents the legitimate education of an adult to a much richer and larger set of legitimate educational services and their legitimacy. Indeed, Leland Medsker's frontiersman project, conducted over the past 18 months, is ample evidence as to where we have come in the arena of the traditional institutional outreach programs, and out into the world of legitimate, nontraditional studies for adults. In the truly American style of entrepreneurship, I think the forces of educational imagination are being unleashed, and perhaps will continue to be unleashed, furiously at work devising a varied menu of educational services for adults. Therefore, the institutionalized system of education, whether it is called a college, or a college extension program, or IBM, or Columbia, or

the Army, must now be seen within the even greater sphere of all education available, in whatever form, to adults. It is a challenge for all of us who have been raised on the reliability of Brand X education (Berkeley, or University of Connecticut, or Georgetown) to identify the individual as a primary source or resource, rather than simply the institution itself. I think that is characteristic of the movement; it is a move away from preoccupation with institutions.

We are also interested in aiding individuals by finding out some answers to serious questions about the individual rather than just answering questions about funding, or institutions, or systems. For if this country ever is to assemble full-scale adult education services, and I doubt that it will, we must learn to know more than we know about the cost of the education of the adult as compared to the benefits of that adult education to society at large. Perhaps, then, we ought not to speak about systems of open learning; this suggests a national policy uniformly and equitably distributed, federally stimulated, state disseminated, locally adopted. I think at the very least that such a national policy is far off. But we can easily talk of consumers and markets, that endless chain of needs and responses for which there must be in our future many modes, many answers, many experiments. And if there were a clue as to what I think are the research possibilities of the future, it would be that word "model." We must have a lot of models, which means we must have a lot of answers, a lot of experiments.

The last quarter of this century in American adult education could be characterized by at least seven gradual important changes. The first will be a decline in credit enrollments in traditional institutions. Not necessarily a very marked decline in general enrollment, but in credit enrollment. The second is a larger ratio of the educated to the relatively uneducated in the general population. The third is a tight, perhaps a very tight, labor market and therefore a somewhat decreased job mobility. The fourth is that the average educated person will be increasingly older over the next 25 to 30 years. The fifth will be an increase in the ratio of ethnic minorities to whites, both in the general population and in the educated population. Sixth will be increased amounts of vocationalism, at least down through the undergraduate level. Seventh will be the increasingly stronger suspicion that the secondary schools of this country are either somewhat or even radically obsolete, and in many instances have been reduced to nothing more than symbolic rites of adolescent passage. Eighth will be a probable decline in institutionally located research, unless research gets much more attention as an

object of educational support by the states or federal agencies. (The discussion at the conference between James Harrison and Robert Andringa shows that for all the good intent of the higher education bills, they do not represent a sizable increase in the amount of money available to students, nor an especially noticeable step forward in entitlements *per se*.) The tenth is not hard to guess. There will be more adults over the next 30 years whose needs are constant but who will be seeking special means to cope with reduced options.

III. Some Questions and Answers

These kinds of potential developments raise many questions. Is the 21st century going to have far fewer institutions of learning? And will those that endure, endure because they accept a new reality and thus need missions? If so, then we will probably find ourselves funding education more and more outside the formal institution. If this happens, the 20th century categories of support for programs and institutions will decrease. And systems of reward will reward the educational services that, in the eyes of the consumer, pay off because they are quicker, cheaper, give better skills or personal satisfaction, or because they represent in the opinion of the adult consumer a reasonable investment on his or her part. That trend might well form a much larger part of the educational support strategy in this nation. But even if only a few of these developments do take place, we will find education for adults continuing to open up and diversify in response. If we are to keep pace with these developments, no single methodology will do. We are going to have to try a variety of ways to cope with a variety of programs, and a variety of opportunities. All of them will depend on the questions we ask.

I am going to list some of the vital questions, and not in any particular priority. They are haphazard because there's no cogent rationale called open learning, and no cogent explanation, or definition of, or plan for what is called nontraditional study. This business is going to be characterized by entrepreneurship.

The basic distinction is between open learning as it extends the outreach of existing educational institutions, and open learning as it exists in myriad forms independent of these institutions. What we know mostly about open learning and nontraditional study is linked to traditional institutions outreach programs—those things that are happening around traditional institutions, and through traditional institutions, and because of traditional institutions, via traditional institution money. We know much less about the various and

sundry resources, programs, and services that are not directly affiliated with traditional social institutions. We do know there are plenty of them. But since most of what we know at present relates to the programs and projects that are related to the conventional institutions of education, we could posit an individualized institutional setting for each contemplated adult education service. The other and necessary side of that coin is institutional cooperation, obviously one advantageous way to aggregate resources in direct response to the need. We need, therefore, research on institutional cooperation. We do not need just reportage; we already have a lot of reportage. We have to get well beyond that now, to look at voluntary and statutory cooperative associations. The voluntary and the statutory associations are almost unknown to us except by name. There is insufficient research on what both kinds of associations do, and why, and how, and whether they are doing any better together than they would have done alone, and whether such an association is not in fact a way to aggregate restraints rather than resources and opportunities. Yet we do have superb examples of collaboration in New Hampshire, in Northern Ohio, and in Virginia. Best of all, the State of Illinois has set up the Higher Education Cooperation Act—a first in our nation. Perhaps we could use 49 more of those Acts, because most innovative programs are tied to regular state funding formulas. And even if there is no formula, there is in most states a mental fix on how to go about funding higher education or anything that happens after secondary school. This Illinois Act directly funds collaborative efforts.

We have, thanks to people like Knapp and Sharon who did their 1974 *Compendium and Assessment Techniques*, a much more refined understanding of how to translate work experience into college credit. But the instruments are often incompatible, untested. We need established standards of performance, which is like asking theologians to agree on a definition of God. We have to probe the problems in institutionalizing assessment techniques and credentialing techniques. Such institutionalizing problems as transferability and faculty involvement are troublesome and need close scrutiny. We have some recognition of the instrumentation, we have some recognition of how many people are doing and how many people are requiring the service, but we do not have any particularly well-established formative evaluation service attached to such services to tell us how they are doing as they go along, and what they are learning. The relevance of such credit to learning goals outside standard curricula are only now testable, thanks to such programs as that at Minnesota Metropolitan College. Existing measures of competence such as

licensing and registration exams should be compared to traditional credentials for their equivalency usefulness. And what is the homogenization effect of instituting such comparability procedures? Finally, the crucial question is this: Where are the tested linkages between the worlds of education and the work that might serve as increasingly frequent models for the next century? We have to find them, we have to create them in many instances, we have to find out how they are doing and why they are doing.

There is the question of adult study at home. We may think we know a lot more about adult study at home than we really do. We have an idea of what adults like and do not like, and when and what the barriers are. We do not have any persuasive idea whether individual study, no matter where it happens, is better than group study. There is constant reference in the literature, and in speeches, to the effect that if you individualize study you have made the best decision. Yet who can produce the persuasive evidence of the truth of that allegation. Some very good comparability studies are required there: And if it is better, who is it better for? Can we afford it, even if it is the better course of action?

We also have, in short, a very serious attitudinal problem that I think is at variance with the idea that adults really need something (if it isn't at variance, it is perhaps an expostulate of it). It is what I call the loneliness of the long-distance learner. We don't know what that loneliness entails and how to reach out for it. Dennis Gooler and his colleagues at the University of Mid-America are starting to try to chart that discovery. In another year to a year and one-half that definitive statement about what we don't know about the adult at home may not be possible. We must start with simple questions: Does she like to work in that room or this room? Modest beginnings to large questions. These things, we do not know very well. Yet, by 1983, Frost and Sullivan predict that we will have about 3.5 million video tape and disc recorders in the houses of America. What does that mean for the loneliness of the long-distance learner? A recorder means that the learner is no longer time dependent on the broadcasts. Is that going to make a difference? Home study is already a billion dollar yearly business, and Frost and Sullivan suggest it's going to double by 1980. We might start now trying to figure out how best to harness some of the motivation that accounts for that prediction.

This invites a correlated concern of what are, I think unhappily, termed the special audiences for various kinds of mediated and non-mediated programs. The assumption here is that we already have a somewhat refined notion of how to reach the average middle-class American adult. We do not.

So there is in one way nothing special about any such adult audience: we are equally ignorant of them all. We do know what some people want, or think they want, in education services. We know they frequently fail to involve themselves in the very services they said they wanted, and even sometimes paid for. We know that the older the adult, the greater the discomfort with multi-mediated learning, and the greater the desire for an authority figure as the constant mentor. But we know these things about people who are respondents to traditional questions based on what can be offered them. In many, if not most instances, what we know we learn from highly self-selected audiences.

But of course there are special audiences. The Ford Foundation is helping Chicanos posit their own answers in a new Chicano-centered open institute called Juarez-Lincoln. The University of Arizona and Stanford used their micro-campus systems to reach out into industry. And a variety of learning services across the country, in Kansas City, Chicago, and the REACH program in Ohio, reach out into the black community, and for that matter, any community that has a special need.

Our survey research has failed to uncover as well the parameters of adult discontent with education in America. If you try to plug any education service into adult discontent, where does that service stop being education and start being psychotherapy? And is there any contradiction? Is psychotherapeutic work of any kind, however indirect, consonant with the classical educational bias of an adult? We do not yet have experiential or experimental results with Black communities, with Chicano communities or with Native American communities: What large body of data we have refers basically to the middle-class white audiences that most open learning services have reached in the past 10 years. In short, much, perhaps most, of the data we have comes from learners that were already rather well motivated, ready to tune in to some form of traditional curriculum, however variously packaged.

On another front, we do not know whether learning contracts work for more than a few, and we do not know yet why they work for how many.

We do not know how to tell what medium serves what need best, although we are making progress on this. Another aspect of Gooler's work at the University of Mid-America is that he is trying to test out what kind of media may make what kind of difference.

We don't know a thing about media as reactors. This is something we have not yet thought much about: media as reactors designed to respond. What we have always started out with is the medium, and

we wanted to know how the audience responded. We are under a considerable obligation to test out the opposite. Yet the media are the major access roads to the adult. They must be understood, for this ailing economy of ours may never again be able to provide that one-to-one therapeutic situation that is a perhaps not-so-ideal educational idea of the utopians.

We find performance-based degrees frequently now. We ought to test them longitudinally as well, for they represent a dramatic change, and we also ought to test their impact on student marketability.

We need much more intensive work on legal constraints or innovative programs in America. We must conclude from that study that an increase in regulatory capacity at the state level is essential to the protection of human rights and avoidance of fraud. At the same time it is certain that some states will want to regulate that which they will not yet support. After all, state provisions for innovations are rare. Indeed, punitive legislation may be much more ordinary in order to protect the states' own institutions from an unseemly invasion of out-of-staters. So this is not unusual, even though the Commerce Clause of the Constitution conflicts with that practice. The Federal Trade Commission does have a hand in protecting students from those kinds of state laws, but we do not know very much more regarding how to go about studying where and when something like an intrastate consortium in its interinstitutional cooperation. In short, the legal constraints have only begun to be understood.

As for cost factors, they are obviously legion. We do not yet know very much at all because we cannot build our own funding system. And so we do not know what kinds of freedom would be unleashed by different kinds of fiscal subsidies. This is a crucial matter—but where and how do we do it? Can we follow the Illinois law for starters? Can we follow up on the Washington State Board for Community Colleges? What college, or interinstitutional project under study for its cost implications, in order to compare the costs of an on-campus process? A whole range of sub-studies are needed to identify that most crucial question addressed partially by Attiyeh, Lumsden, Klees, Jamison, Dresch, and Palola all around the country: how to obtain net social product (the economists' way of saying "the good education does.")—which still means figuring out the difference between the social benefits produced from an adult's education, and the costs of that education. And equally important, we must experiment much more realistically with the supply and demand entitlement measures as an alternative way to foster nontraditional studies for adults. We know, thanks to Edward Palmer and Keith Mielke, a great deal about formative eval-

ation. Thanks to the very precise beginnings made by Jeff Schiller and his colleagues at the National Institute of Education we will, by 1976, start knowing more about how to evaluate the process of innovation: Not "Is it doing great?" or "Is it getting a lot of students numbers?" But: "What is going on here?" "How did that innovation come about?" "What are the factors that are or are not marketable elsewhere?" In other words, we need a method for understanding innovation as an event.

A few more vital questions will illustrate our ignorance further. There are national assessments of adult education staff development being conducted by the Center for Resource Development in Adult Education. We do not know anything about how to train staff for open learning schemes. We do not know very much (but we do know something thanks to the ACE study on giving credit to industrial or government-based educational programs for adults) about how to go about evaluating programs in terms of their legitimacy (whatever that means) and credit transferability. We do not know too much about cooperative study as a way to go about the adult education scene. Although we do

know that the Institute for Off-Campus Experience at Northeastern University, a large 18-college and university-sponsored service center for adults, may be unique, but will it subsist quite independent of its constituent colleges? In short, we do not know how to build on existing resources; this is the major linkage problem. And finally, we don't have a mechanism other than traveling wizards like Richgate and Norman McKenzie for sharing the wealth internationally. Much is happening in applied and developmental research and evaluation. We need an organism to feed, and to be fed, by us.

So in conclusion, let us start this mixing bowl of various enterprises by finding across the nation who is doing what. In other words, we need a classification job, and a big one. Then let us, step-by-step, increase our knowledge about the adult, the ways adults learn, what they need, and the systems of services or the centers of services we could provide. The 21st century is just around the corner. Research has some dreaming and some hypothesizing, some experimenting and some evaluating to do before it catches up with both today's and tomorrow's adults.

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Design for Open Learning: Implementing a Network of Existing Educational Resources

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This paper consists of some analytical reflections on what has been learned about implementing expanded adult open learning in Massachusetts through research and by trial (experiential learning) over the last three years in designing expanded adult open learning services. The approach we have taken initially in our continuing education master plan study¹ is one approach to the implementation of expanded adult open learning opportunities at the state level. It is one of several possible approaches which are being tried in various states. No one approach has been proven as optimal. This paper draws on the experience of several states to provide an analysis of the factors which govern successful implementation of expanded open learning.

Part One of this paper consists of prescriptive comments on effecting the process of research, design, pilot testing, and implementation for open learning. The issues explored include how a research strategy should be designed and how the process of implementation through a trial and pilot testing approach should be undertaken. Finally, the implications and findings which result from taking the suggested approach are outlined.

Part Two consists of a discussion of the specific implementation of two recommendations we have made to the Commonwealth of Massachusetts. The first of these is a series of Community-Based Educational and Career Counseling Centers and the second is an Adult Recurrent Education Entitlement Voucher proposal now pending in the state legislature.

Before going into Part One, several essential perspectives for implementing open learning should be reviewed.

First, it is important that the "starting point" or perspective of an effort to expand open learning be clear and honestly stated from the outset. Some overall design from which criteria for effective research and implementation of initiatives can be derived and formulated should be apparent from the beginning. For example, if one's objective is to expand the mission of a particular segment within the public higher education structure in the state, then a certain set of logical conclusions follow about how that might be done and about the types of criteria which should apply. If the objective is to start from a consumer's or client's point of view and utilize all the existing educational resources to design new services to meet identified gaps in existing services to those clients, then other criteria apply. I advocate the latter approach.

The second theme is the concept of an "adult open learning universe." In planning for expanded adult open learning, one cannot treat only higher education institutions. Data indicate that less than one third of adult learners are learning in formal higher education settings (indeed, that figure might be lower than one fourth). The adult open learning universe consists of a variety of providers of educational services (employer programs, union-based programs, proprietary schools, private adult centers, community agency programs, etc.). The adult learning force consists of those individuals who are undertaking learning activities in these different settings. This broader concept is important as a guide to research and to selection of program initiatives. Utilizing it leads to very different conclusions for program selection, as will be clear later. For example, the use of existing faculty at a particular institution facing declining enrollment to staff a new program of an "exciting innova-

tive educational" nature becomes less important than the programmatic designing of services for adult clientele who are not being adequately served.

A third theme is based on the fact that over the last few years there have been a series of studies and reports with various recommendations in the Commonwealth of Massachusetts, and much discussion about what should be done to expand open learning. Sufficient time has passed now that the relative impact of different efforts can be assessed, compared to other states, and examined to see what lessons can be learned about the process of implementing open learning. Some of these lessons are developed in the text which follows.

Fourth, research should be developed so that intelligently formulated decisions about the kinds of innovations which should be undertaken will result. Then, with that research as a basis, one can slowly gain support for certain innovations so that they are enacted into law or started as pilot programs. A discussion of "guidelines" to be considered when designing and implementing open learning research and relating that research to necessary political and budgetary actions to achieve program implementation will also be presented throughout this paper.

Fifth, demand as well as supply subsidy modes must be considered if open learning is to be expanded. Other states have initiated strategies supporting the supply side of open learning such as opening new institutions to grant external degrees. Massachusetts has been moving in a different direction. Rather than a high-level decision resulting in a *fait accompli* of a new open learning institution providing services to be marketed to the public, Massachusetts has engaged in a lengthy, expansive debate without a preconceived direction. Now, building of an open learning system based on a design derived from lengthy analysis and debate has begun.

Sixth, the design is meeting gradual successful implementation because: (a) it is based on an existing system and the support for initiatives has been built gradually; (b) the initiatives are primarily based on social priorities; (c) the benefits of creating linkages between the components of the existing open learning universe rather than creating new institutions have been recognized; (d) those clienteles most in need of open learning services (primarily adults of low income and low previous educational attainment level) have been identified; (e) the subsidy of demand through selective entitlement vouchers vs. supply or the subsidy of the consumer/student has been advocated. This approach has been referred to as the "Massachusetts model." It is a distinctly different approach than

that pursued in other states. The long-term result may be similar or more successful.

Seventh, the implicit assumptions about purposes which underlie the research determine how the research is approached and what questions are asked. For example, on considering a research project or experimental design, is the real purpose to build an institution and to undertake new ventures of professional interest to the advocates of those ventures, or is it to serve some public purpose or social need? These two purposes are not necessarily in conflict. However, when the possibility exists that the project or research study will yield conclusions unacceptable to the institutional or professional purposes being served, this possibility can significantly affect how research is performed, what questions are asked, how the data is presented, and how it is then used.

For instance, the initiation of a new undertaking which revolves solely around a university system, a state college system, or a community college system can easily exclude possibilities which might better serve a client for whom the innovation is designed (e.g., a cooperative arrangement between public, private, and proprietary schools in an area to implement the same innovation at a satellite center). The regional or metropolitan perspective of looking at the educational resources provided by a variety of institutions will automatically be barred from consideration. Evidence from the continuing education master plan study in Massachusetts indicates that the regional perspective corresponds more directly to client needs and in the long run is a more economical way to undertake innovation.

Eighth, particular care must be taken to examine at the outset the terms of reference for research. In undertaking research, one is beginning a series of steps which in the end will constrain the public policy options available for implementation. The series of steps have a domino effect upon each other—the points of reference affect conclusions about research strategy, which then affect viability of design alternatives, which affects the selection of pilot tests, their design, and their evaluation, which ultimately constrains final implementation.

Part I: Research to Implementation

This section is made up of 11 rules for how research, design, and pilot-testing should be undertaken to implement expanded open learning. Implications, findings, and conclusions are based on the Massachusetts experience.

Rule 1. Research should start from a perspective of "the public interest" and a statement of

social purpose and priorities relevant to the area under consideration.

The starting point for research should be a statement of social policy criteria such as equity and efficiency and the assumptions and priorities which would be derived from them, such as focus on a particular target clientele group as a priority. Research should then proceed to produce and analyze data; define issues for appropriate public debate, decision, and action; define policy parameters; and leave a fairly open-ended set of recommendations. These can subsequently be pursued in public debate and modified as appropriate without constraining the public policy opinions unduly by the particular nature of the research performed.² Coordinated, rational plans should be pursued, but detailed proposals should be adopted through debate within the guiding principles set forth by the design. Research should produce accurate data relevant to policy parameters, show the rationale and implications of possible public decisions and investment, and outline subjects for public debate, decision, and action.

In this connection it is important to note that one of the reasons open learning in many states has not developed a greater degree of political support is that advocacy for institutions or for a particular group of professionals is often proposed. Legislators and the public see through these proposals, as do advocates for other institutions.

High priority starting points for expanded open learning research and experimentation should include manpower skill shortages related to the economy and the provision of educational services to recipients of welfare and other programs to improve their position in life and their marketable skills. When open learning proposals start out from such premises, they are much more warmly received by legislators, by the business and labor communities, and by other groups than when they are presented as glamorous new proposals conceived by professional educators. Hence, rather than starting out from the perspective of the type of open learning initiative which would be "interesting to do" or "dramatic in the eyes of other professional educators," a conscious effort must be taken to adopt a radically different perspective. The perspective should be based on initiative and directions in open learning which would be most helpful to public interest and the clients or consumers of the educational services. In Part II a series of specific examples and implications of this type of approach are illustrated.

Examining who is and who is not participating in the current system of adult open learning and the benefits derived from such participation, one

concludes that the existing array of adult open learning services, particularly the higher education sector within that set of services, is widening the gap between those adults who are well off (income, job status, previous education level) and those who are not so well off.³ Clearly this effect is contrary to social purposes. Adults should have an equal opportunity to pursue continuing education.

From the perspective of the social purposes of adult open learning, one must ask research questions in a policy-relevant form. For example, the issue is not that the range of ages served by a given adult innovation are 18-84 (which sounds quite impressive if your objective is to push that particular innovation). The issue is what is the exact distribution of age among the clientele using the innovation and how does that age distribution correlate with other characteristics. Obviously, at the extreme, one can achieve an 18-84-year-old age range with all 18-year-olds and one 84-year-old! Further, it is possible that all those 18-year-olds are highly advanced, elite students who have special preparation! Yet quoting the general figures is totally insufficient for answering these questions. If one begins from the perspective of social purposes, the question about age distribution and the correlation of age distribution with other characteristics for clients served by a particular open learning innovation is logically addressed and unavoidable. Starting from a traditional education perspective, the researcher or planner is not forced to confront this issue.

From the social services perspective, the research question or the program design question is not how to start a new institution or innovation. Rather, one must discover how to reduce the segmentation and barriers that presently exist between the several provider sectors within the open learning universe. (As discussed later, the differences of these perspectives can affect dramatically the success or failure of an innovation since open learning cannot be "sold" to a legislature as open learning, particularly when the people doing the selling are higher educators who are suspected of special pleading for their favorite initiatives or innovations.)

If one begins from the perspective of social purposes, one realizes that there is significant unmet demand for adult open learning services, and that demand has certain characteristics. For example, a substantial portion of the demand is from adults who have not completed secondary level education. Hence, approaches to serving the unmet demand cannot be totally post-secondary in nature.

Thus, the Massachusetts studies⁴ concluded that potential students not in the existing continuing education programs tend to have low incomes,

lack educational preparation, believe continued education will not be of benefit in their day-to-day life, or have had bad school experiences in their younger days. However, their interest in continued education is much higher than their lack of interest (91 per cent of professional workers expressed interest in continued education, and 74 per cent of skilled workers did also).

Following this approach, further startling facts emerge which most current open learning innovations do not address. At present, three per cent of male students and two per cent of female students enrolled in continuing education programs have less than a high school diploma, yet fully 40 per cent of the total population over 18 in Massachusetts have not completed high school.

After discounting expressed interest for a strict "willingness to pay" statement and weighting for population distribution, the prime market for an external degree in Massachusetts was determined to consist of 39 per cent of people who had completed one to three years of college, 36 per cent with only a high school diploma, and a full 25 per cent of adults who had not completed high school.⁵

The target population was divided into two groups, the "second chance clientele" and the "disadvantaged clientele."⁶ Skilled and unskilled workers constitute the largest number of potential students, since many in this second-chance group would have gone to college if they had been born 20 years later. This group constitutes a cost-effective open learning investment priority since they often have certifiable skills and seldom need a lot of remedial or ancillary services. The highest social priority must be on the disadvantaged clientele (racial minorities, the institutionalized, and special groups such as high school dropouts, unemployed, handicapped, etc.), although they may cost more to serve.

Thus, starting from the perspective of social purposes served by open learning brings up new questions. The research questions asked above regarded participation rates and the comparison of those participation rates with interest rates on the part of various adult constituencies. Often only the question of interest in the particular form of expanded open learning being advocated is asked. But, it is only by a comparison with client participation rates that one can identify the target clienteles, and hence their particular barriers to realization of their interests in terms of actual participation.

One is prompted to do comparison of participation rates with expressed interest rates only if one is trying to answer the question, "Who is getting served and who is not getting served?" That is a

question of equity and social concern. There are a number of open learning demand studies around the country which address only the general need question and are primarily used to justify the implementation of new programs of a general kind.

Rule 2. Adopting a consumer's or client's point of view requires that analyses of potential clients for expanded open learning services be performed so that the design of the open learning proposal develops from the research and reflects a consumer's perspective.

Many in higher education discuss the needs of clientele, but simple analysis of needs of clientele, by itself, can be very different from what is meant here by "a consumer's point of view."

From an adult learner's point of view, higher education as a sector is not necessarily at the center of the adult open learning universe, nor is it necessarily the most desirable provider of open learning. In planning expanded open learning, the question asked usually, for example, is of the following type: "What is the market for an upper division external degree program in a given state, offered by the state university?". More correctly, the question which should be asked from a client's point of view: "Who is being served and who is not being served by present adult open learning services, and what modifications or additions to those services are needed to serve specific clienteles not now served?"

The subtle difference in these two perspectives becomes magnified as an effort proceeds from research to design to pilot testing, and final implementation. In the implementation stage, the set of options to be presented and possibly pursued can be dramatically constrained in terms of the set of possible options which might be useful to the consumer.

Hence, it is appropriate to examine classes of services rather than classes of institutional providers of services. In the open learning universe, there is an array of providers of educational services. From the consumer's point of view, it is the services provided which are the distinguishing factor, not the particular provider of those services. This is a perfect example of how the particular perspective taken determines the research questions asked. If one adopts the client's perspective of services, then one asks the policy question, "What are all the ways a particular set of services can be provided?" rather than the question, "What's the market for what we professionals in higher education want to do to extend the services of our institution to 'new clients'?"

In adopting a consumer's perspective to the analyses of expanded adult open learning needs in

Massachusetts, several findings have emerged:

1. It is precisely the consumer-centeredness of the studies performed and the cutting across of territorial boundaries in these studies and recommendations which have led to a generation of political support for several of the ideas proposed. The Community-Based Educational and Career Counseling Centers, the Adult Entitlement Voucher proposal, and other ideas have generated support primarily because these factors are evident to many legislators and others. Importantly, these distinctly are not proposals serving only a particular territorial segment within higher education or within the adult open learning universe. They serve a broad consumer-client segment.
2. Geographic service area planning is the appropriate way to approach the definition of needs for expanded adult open learning services and the utilization of existing resources to meet those needs.
3. Generalized gross discussions of adult demand, while comforting, lack the precision needed for policy choice. In such studies, while general issues are treated, none of the questions are raised with sufficient precision so as to permit the design of targeted policies.⁷ To design effective investment strategies for limited public resources, a precise identification of target clienteles, consistent with social priorities, must be undertaken.
4. A large part of the prime market for an external degree program in Massachusetts was made up of students who had less than a high school diploma. Many "market studies" have as their objective the determination of the market for services which a particular post-secondary college or system can offer. They do not determine which consumers with which characteristics want which services. Because the objective is slanted, a different conclusion is reached, perhaps biased by the socio-economic level, or other factors.
5. Experience in Massachusetts with the state continuing education master plan study indicates that there is utility in having the open learning idea advanced by someone who can serve as an advocate for the consumer without having an obvious tie to one of the particular vested interest educational constituencies, such as the state university, or others. In our case, serving as independent consultants, we received a degree of trust from state agencies, legislators, community groups, etc. These groups would have been

suspicious of attempted special pleading if dealing with a representative of a particular segment of higher education. The neutrality made possible both by the original funding agency, the Massachusetts Advisory Council on Education, and by our status as independent consultants facilitated discussion of proposals on their merits rather than on grounds of who was proposing them."

6. From a consumer's point of view, open learning initiatives which professional educators might not regard either as "open learning" or as exciting may, in fact, be quite significant. For example, a traditional course offered at a remote time and place is not considered by many educators to be open learning. However, from a consumer's point of view, it is significant and desirable.
7. Needs analysis should be regularized, and consumer participation in decision making about open learning initiatives should be undertaken.
8. A priority must be placed on the blue collar and disadvantaged adult clienteles. Much educational innovation in open learning is, in fact, quite elitist in its orientation. Many innovations in open learning, while quite worthwhile, will claim, for example, that 50 per cent or 80 per cent of their students are housewives. But one must determine the socio-economic groups and the particular personal circumstances of the housewives. It is possible for an innovation to serve a clientele made up 100 percent of housewives, but it is also possible for those housewives to be not at all representative of the larger population of housewives who wish to be reached with open learning services. Again, a lack of specificity and attention to detail makes the sound design of specific public policy initiatives difficult.
9. It is clear that somewhere an open learning experiment should be tried in which all the component pieces of expanding adult open learning are in place. These would include financing mechanisms, information counseling and referral mechanisms, instructional opportunities using a variety of resources, and forms of external credit and degree-granting opportunities.

Rule 3. A low-profile, piecemeal, step-by-step, experimental, long-term approach to innovation and expansion of adult open learning will eventually be more successful than dramatic new initiatives started with large external grants or by

authoritative decisions—avoiding "the *fait accompli* approach".

As illustrated in several states, a tendency exists among educators to draw over-blown perspectives and to promise too much in the expansion of adult open learning services. Then promises are not fulfilled, and resistance and opposition are generated. A far more constructive approach is to concentrate on a manageable piece of the overall design for open learning. Then, that piece can be gradually implemented. Once accomplished, work can begin on another piece. By this slow and steady building approach, the cumulative effect of these incremental steps at the end of a five- or ten-year period will often be greater than that which could have been achieved had all "support capital" been expended at one time, in an effort to initiate a high-profile undertaking.

The Community College of Vermont is an excellent example of a major innovation which took place following the "low-profile, gradual" strategy. A second is the program of Community-Based Counseling Centers in Massachusetts, which is described in more detail later in this paper. Empire State College and the Regents' External Degree Program are examples of innovations which have a much higher profile and which were started more by *fiat* than by the gradual building of support in many quarters.

For comparative purposes, another strategy should be mentioned. It is what I will call the "far out and fall back" strategy (as opposed to the "low-profile, gradual" or "authoritarian" strategies). In the area of accreditation, the work of the Newman Task Force illustrates this approach. A factually correct, although somewhat abrasive, piece was deliberately prepared on accreditation to prod accrediting associations into action. It was never the intent of the Newman Group to publish immediately the accreditation paper in its first form, but rather, to have it be a discussion piece. The mere circulation of it within the accrediting community, given the detailed list of abuses which the paper outlined, led to a responsible response on the part of the Association after the initial period of shock and defensiveness passed. With this constructive action on the part of the Association, the Task Force's objectives were achieved, and the publication of a highly critical and provocative accreditation paper became unnecessary.

Another example of this strategy exists in California. Assemblyman Vasconcellos has been highly critical of the public higher education system, and has proposed a fourth segment to meet a variety of unmet needs in the state. During the course of a study performed this year for that assembly subcommittee, the posture has changed

The subcommittee's study will most likely recommend that a fourth segment *per se* is not needed,⁸ but that a series of complementary efforts to the existing segments is needed. Yet, the fourth-segment proposal was necessary initially to prod the existing segments into greater responsiveness than they would otherwise have exhibited.

Several conclusions are reached from our plan in Massachusetts:

1. While pursuing a low-profile incremental piece-by-piece strategy, it is important to have a broader frame of reference, a larger design towards which each of the incremental steps moves.
2. Administration has been referred to as the "science of muddling through," and the initiation of expanded open learning is a similar phenomenon. It is simply unrealistic to assume that research can be done completely. Therefore, as a rule, a trial period of low-profile experimentation is desirable before a program or initiative gets underway on a major scale. This approach has been referred to as the "You can read Freud for years, but sooner or later you have to go out on a heavy date" approach.
3. A persistent problem in all innovation—and the low-profile strategy is no exception—is the problem of the creation of a "new orthodoxy." People, particularly educational entrepreneurs, tend to be tied to the particular design and approaches they are implementing, often to such an extent that they lose sight of the broader objectives.
4. In Massachusetts the pilot program of Community-Based Educational and Career Counseling Centers started off on a pilot basis for a two-year period with state funding, prior to becoming a more firmly established program. These centers were established in an effort to overcome the following barriers to low-income and low previous education adults' effective use of the adult open learning system: the prospective client's perception of payoff from the effort, perception of lack of ability to effectively undertake the effort, and financial resources. The Counseling Center Program and the Adult Voucher program were designed to meet these problems specifically.
5. The selective entitlement program, as designed in the Adult Recurrent Education Entitlement Voucher program now under consideration in the Massachusetts legislature, is a low-profile incremental step towards a more generalized entitlement. It

is a program designed to target limited available resources on those adults most in need. It is contingent both on income level and previous education level. Thus, it targets aid on adults most in need. Since it is used on existing instructional resources, the recipient can use the voucher at any public, proprietary, or independent institution or organization within the state to buy educational services. The program is designed to have a two-year experimental period, a "shakedown cruise," at which time it will be reviewed by the legislature and modified for permanent continuance.

6. One approach that could be used to provide certification to the non-degree granting providers of educational services or to provide testing services for external certification is to create a new Massachusetts Open University. We have suggested an alternative approach, which is a low-profile combination of the approach advocated by the Massachusetts Open University⁹ incremental strategy and a new brokering approach in which linkages between individual proprietary schools and individual colleges are brokered, permitting credit transfer.¹⁰

It is important to recognize that there are several possible ways to deal with the problem of relating non-degree granting providers for post-secondary educational services to degree-granting institutions. Among them are: the state external degree strategy, the CASE guide strategy, the UWW strategy of each satellite's having approval, and the brokerage strategy which actively seeks to achieve linkages between institutions.

In order to achieve a greater linkage between education and the labor market, the low-profile strategy has suggested that rather than create publicity and state reports, it is more appropriate to broker linkages between proprietary schools and companies. A company's defined skill need can be met by a particular school.¹¹ Again, the strategy of an active broker is suggested, a relatively low-profile incremental strategy. However, it should not be forgotten that the results of incremental strategies are often substantial cumulative changes in the educational system.

In Massachusetts, as in several other states, the proposals for new open learning initiatives become somewhat overblown when they are converted into high-profile, high-publicity undertakings. We have seen in several states, including Massachusetts, setbacks for these initiatives as a result. Resistance mounts in many quarters, and support for the undertaking evaporates. In Massachusetts, it is clear that support diminished for many of the

recommendations of the continuing education master plan study when added to the overall University Task Force effort several months later because the recommendations then become conceived as part of a massive new segment in higher education in the Commonwealth. When the Task Force concluded (due in part to the substantial resistance), support for individual recommendations in the continuing education master plan study again began to grow. Hence, implementation of the recommendations comes most easily not as a new institution or segment, but as a complementary piece-by-piece implementation of suggestions for expanding open learning services which are clearly supportable on their merits.

Rule 4. Expanded open learning services should be designed to specifically build on existing resources (broadly conceived) through the creation of linkages and complementary new efforts, and should start with a comprehensive approach to continuing education and adult education planning.

Open learning is not a new phenomenon; primarily, it is new to traditional educators in higher education. When one considers the vast array of activities taking place in the adult open learning universe, one readily sees that higher education is not at the center, nor is it necessarily the most innovative sector within that universe. What is new in much of open learning is the willingness of traditional higher education to acknowledge the legitimacy of various educational activities that have been going on for decades in higher education's own traditional terms of credit and degrees. Further, the higher education sector has changed its own disposition to new approaches, although in many instances for indirect reasons (such as declining student enrollments). There is a new willingness to undertake new initiatives responsive to the needs of a variety of clientele who previously were regarded as unsuitable for the services that higher education had to offer.

The appropriate perspective is a broad conception of the adult open learning universe, consisting of employer-based education programs, union based education programs, proprietary schools, libraries, community agencies, etc. A deliberate attempt to build on the existing resources of the adult open learning universe leads to an approach which seeks to play to the inherent responsiveness which that universe has exhibited in the past, and seeks to renew the responsive client-centeredness which pervades it. This approach is the most efficient approach for utilizing the extensive adult open learning system which currently exists, and for expanding it to meet social objectives. This is the

essence of the approach taken in the Massachusetts continuing education master plan study.

Given this perspective, research and program design should be focused on how to convert an array of providers of educational services for adults into a network of providers. To accomplish this, linkage mechanisms must be developed which will achieve a networking of existing resources. Then the gaps in the types of services, as well as clientele being served or not served, can be identified. This approach allows initiatives to be focused on making the existing resources work better to serve the broad spectrum of adult open learning needs.

The idea of utilizing existing resources is not inherently new and unprecedented, but most states have chosen other more dramatic approaches. Importantly, some of the specific efforts we have undertaken in Massachusetts are responsive to the key question of how to actually achieve linkages and implement this design.

It is instructive here to compare the examples of the "new institutions" strategy, where the emphasis is placed on creating new providers of educational services (as typified by Minnesota Metropolitan State College, Empire State College, and Edison College), with the "existing resources strategy" approach suggested in Massachusetts. In this strategy, instead of creating new providers of educational services to create new services for new clientele, other mechanisms are employed. The two specific mechanisms which have gained the most support, which I will discuss subsequently in this paper, are the demand subsidy mechanisms, through a program of Adult Recurrent Education Entitlement Vouchers, and a series of Community-Based Educational and Career Counseling Centers.

In a time of retrenchment and the need for new missions, it should not be forgotten that extended open learning services can be achieved through ordinary efforts adopted by institutions. For example, project AHEAD of the Army has utilized the home institution idea for banking of credit from a variety of sources rather than relying on the creation of a new institution or a statewide credit bank, etc. Indeed, these very pragmatic missions when performed by traditional institutions carry with them two advantages. First, they involve the institution directly in meeting one of the very pragmatic problems associated with open learning, and second, they advance the cause of open learning and build support within that institution. Hence, in using existing resources, individual institutions should be encouraged to undertake assessments, brokering, and credit banking activities without the immediate consideration of new statewide institutions to perform all these functions. The 1980's were a time in which the major objective and need

were to build capacity. In the 1970's, the challenge is how to best utilize the existing capacity to fill those gaps in service, enhance clientele acceptability, and achieve an effective networking of the variety of existing providers of educational services.

The researcher should not begin the design of a new institution with all the exciting things that he wants to include in that institution, without a complicated but necessary analysis of what already exists. Hence, open learning initiatives at the state level should grow out of a continuing education master planning effort like that performed in Massachusetts. From such an effort, the need for specific new initiatives can be precisely identified and public investments in expanding open learning made efficiently.

For example, Glen Pulver's studies in Wisconsin have shown that credentials are not important in the demand expressed by many adult open learners.¹² Further, a good deal of caution is required in responding to student interest survey data since often the students responding are not aware of what could be provided and what kinds of services could exist. The issue of whether continuing education should pay for itself or receive general subsidies is also related to the question of societal benefits.

The perspective of using existing resources leads to a sharp focus on the gaps in those existing resources, so that public investment may be targeted most efficiently on filling a gap which is denying services to certain client groups. From the perspective of utilizing existing resources and maximizing the efficiency of new investments, it is clear that the design of linkage mechanisms is the key to success for this approach. Hence, when a given problem in the system, such as the provision of counseling to adults, is identified and a selection of possible approaches exists, the linkage mechanism (such as the Counseling Centers implemented in Massachusetts) should be selected as the mode of preference. Linkages can be of several types, as has been referred to previously in this paper. These include financial mechanisms, brokerage mechanisms, outreach clients advisement mechanisms, and area planning strategies.

For example, studies of the need for expanded open learning in Massachusetts have shown a heavy disposition for expanded vocational and occupational educational services; a deep concern on the part of labor, business, and community groups about the self-serving nature of the education bureaucracy; considerable support for career counseling and guidance centers if those centers would act as a catalyst and linking mechanism; the need for a clearinghouse of data on education and jobs

in the area; considerable disposition against traditional degree programs among employers and students; and a high degree of pragmatism on the part of students and employers alike regarding open learning services.

Rule 5. The greatest point of leverage exists for expanding open learning services at the state level, and initiatives should focus primarily on this level. (What is meant here by the "state level" is not just state higher education, but the broader spectrum of state agencies, including manpower agencies, human service agencies, economic development agencies, etc.)

Continuing education has been neglected in statewide planning efforts in most states. The continuing education master plan study completed in Massachusetts in 1973 is the first effort to adopt a comprehensive statewide approach involving the entire adult open learning universe. Moreover, not only has continuing education been neglected in state education planning efforts, but the role of continuing education in manpower economic development plans, as well as in state human service and rehabilitation plans, has generally been neglected. Again, it is more appropriate to conceive of an open learning universe rather than just the perspective of higher or post-secondary education in the state. Systematic studies of public policy needs and goals, priorities, and problems should be performed from this perspective. Usually, planning studies in open and nontraditional learning are not performed from that perspective.

The states are best suited to perform this type of comprehensive planning because all the various constituencies that comprise the adult open learning universe are represented through a variety of state agencies. Traditional higher education is usually represented through statewide coordinating agencies. Employer-based education conducted to maintain corporate vitality and growth is represented through the Department of Commerce and Development. Labor-based education is represented through the departments or agencies dealing with labor. Proprietary schools often have state associations which can be involved in planning efforts, etc.

Although the greatest leverage and long-run gains can be achieved at the state level, not all planning should be statewide. On the contrary (as noted below), it is clear that area-based planning is most appropriate for the actual analysis of services provided. However, the greatest opportunity for leverage occurs by mobilizing the constituencies' support for long-term expansion of adult open learning services and public financial commitment at the state level.

Innovations too often are funded for one to three years through federal or foundation grant funds. They operate well during that period of time. However, eventually the innovation dies because "the funding runs out," and the foundation for continued state support has not been adequately built.

This phenomenon can be avoided if commitment from the state is obtained first through any of a variety of incremental administrative and legislative initiatives. For instance, while some community-based counseling projects have been started with demonstration money from the Fund for the Improvement of Post-Secondary Education, and from private sources, many of these centers are now running out of funds and facing difficulty in obtaining continued state support.¹³

In contrast, in Massachusetts, the pilot program of six area-based counseling centers was started with a small state appropriation, and tested for a two-year period. During this time additional outside funds were obtained to supplement the state funds. With the pilot test period now completed, an additional state commitment has been made and a large permanent program has been established. Thus, in the short term the directly funded innovation has a more dramatic impact and a higher profile. From the perspective of three years, the low-profile, incremental approach undertaken in Massachusetts has resulted in the largest and most comprehensive program with the greatest stability and permanence.

One of the great advantages of the Community-Area-Based Educational Opportunity Centers program in Massachusetts is that from the beginning it was directly linked to state purposes and state funds. The then Secretary for Educational Affairs, Joseph Cronin, started with a priority to design ways for education to do more for welfare recipients, not a priority simply to create a new institution or program. With this charge, a proposal was designed and implemented to meet this need.¹⁴ It is worth noting that there had already been state reports which recommended regional learning centers to provide a variety of instructional guidance and counseling services. These particular approaches were not accepted and implemented precisely because they were "overblown"—that is, they proposed trying to do too much all at once. Hence, a more targeted and specific effort was started. From the very beginning, it had a state financial commitment. After going through a two and one-half year trial period, the program is now being expanded, and its permanence appears assured.

This stands in marked contrast to the WINNERS counseling center attempted on a pilot basis in Boston, funded by FIPSE. That center did not

have linkages to state resources, and by disposition was not inclined toward state linkages. It is now facing the end of FIPSE funding and trying to find sources of funds to continue its worthwhile operation. Thus, although the single center in Boston received far more national recognition since it appeared at the outset to be a much more dramatic undertaking with more funds at its disposal, its long-term impact will be far less, because of its isolation from the developments occurring at the state level (a voluntary isolation on the part of that project). A state-level incremental movement, taking place in the direction of establishing a program of such centers, scattered about the state and gradually strengthened, has proven a successful innovation with wide-spread support. Additional comments on this program are presented in Part II of this paper.

The second major initiative underway at the state level in Massachusetts is the Selective Adult Entitlement Voucher bill. In this case, the strategy has been to put forth a well-designed proposal (1973), carry it through a process of discussion in the state for over a year (1973 and 1974), and then file legislation. Passing legislation prior to seeking of external funds for a demonstration will give the program a state commitment and derive a better chance of long-term success. The more typical approach is to seek demonstration funds for a trial of the project. The belief is that if the project is successful, the state and other sources will be convinced to fund it. This is very often not the case. Evidence of state support should be evident before major demonstrations are funded.

Rule 6. Open learning initiatives should be deliberately designed to achieve leverage on other resources besides those public funds directly invested in the implementation of the particular policy, innovation or initiative.

Financing modes which do not replace funds currently being invested in adult open learning and which would continue to be invested in adult open learning are crucial. A vast amount of private resources from individuals, employers, and other organizations is presently invested in adult open learning. Uniform subsidy programs through flat rate low tuition at institutions or through universal entitlements, while having some beneficial effects, would also have the effect of simply replacing these private resources expended to provide adult open learning services. Given limited public resources and given a variety of clearly defined needs consistent with social priorities for expanded adult open learning, a far more constructive approach is to target limited public resources in areas where private investment is not now sufficient; for in-

stance, public resources should be used for aid to adults of low income and low previous education.

The linkage strategies previously suggested are also designed to achieve leverage with new public investment by fostering activity and responsiveness on the part of the existing providers of educational services. Conscious attention should be paid to this leverage factor in the selection of open learning initiatives. In this manner, the limited resources available in these times of financial stringency for new open learning initiatives can be made to have a far greater impact than if those resources are invested directly in the provision of educational services (instruction) or in the development of new curricula or teaching materials or media.

Innovations which will serve larger numbers of clients for a given dollar investment are favored over those which, while they may be highly desirable, will serve a small number of clients. This is not to suggest that high cost per client individualized instructional programs are not worthwhile. From a public investment standpoint, if a state is in a position to invest two million dollars in expanded adult open learning services, the best guideline for deciding on the investment is to select that investment which will leverage existing resources in the system to serve clients not now being served, and which will serve the maximum number of clients. As an initial strategy this has additional advantages of building political support for further expanded open learning initiatives.

Political leverage for expanded open learning services can be crucial. It should be built by first selecting those innovations which will be supported by a variety of public constituencies (industry, labor, community agencies, etc.) rather than those which will have only the support of a particularly far-sighted but limited segment of the entire education community. Once a general political base support for expanded open learning initiatives is built, then resources can more easily be obtained for other initiatives. Hence, a pragmatic approach to the design of initiatives is one which speaks first to expanding services in a manner which would be most cost-effective for the largest number of unserved clients, and is a more constructive initial approach than dramatic new undertakings which serve limited constituencies.

A good example of the leverage strategy has been the conclusion that service area planning is the most appropriate approach. The point of such planning is primarily to bring groups of people together to undertake cooperative planning. Great things can be achieved with such an approach as is illustrated by The Open University of the United Kingdom. One of its major accomplishments has

been its effectiveness as a vehicle for mobilizing groups of subject matter specialists and media specialists into various teams.

Another recommendation derived from this perspective in Massachusetts was the recommendation for tax incentives to employers to leverage employer investments in open learning. A third conclusion from this perspective has been the gradual building of support through a program design and refinement process which has taken place over a period of two or three years in Massachusetts.

Rule 7. Non-coercive approaches for policy and initiatives tuned to the natural tendencies or pattern of response of the existing adult open learning universe are to be favored over directive or authoritative approaches.

The researcher and program designer should try to discern the natural tendencies and patterns of responsiveness in the existing adult open learning universe. Then he/she should design and program initiatives to foster those natural tendencies rather than authoritarian or directive approaches which force certain behaviors. This approach builds constituencies for adult open learning.

Much of the effort to convince legislators and others to invest in open learning has had an air of educational idealism. The most successful strategies are the result of enlightened self-interest. These strategies are responsive to public policy objectives, providers of educational services, and clients. Much of the massive private investment which presently occurs in the adult open learning universe is investment made out of enlightened self-interest. The power of this approach for building a long-term public financial commitment to expanded adult open learning should not be underestimated. Non-coercive approaches seek to design new program initiatives based on an analysis of the factors which determine the success of existing undertakings. In analyzing existing innovations particular attention should be paid to the role of the visceral instincts of the entrepreneur which lead to new programs and services, as well as the role of the pressure of consumer needs which is manifested in many ways. (It can be argued that the present manifestation of consumer needs not being met by the traditional higher education sector is one of the reasons why the general support in the public and in the legislatures for higher education expenditures has declined.)

Finally, the non-coercive strategy promotes workable and pragmatic ideas which generate on their own accord necessary support in a reasonably short time. Often the failure of dramatic innovations to generate support can be attributed to

the lack of pragmatism and workability of the proposed idea rather than to the "unenlightened character of the legislators," as advocates of dramatic innovations sometimes choose to believe.

Several specific recommendations for implementation have derived from non-coercive, incentive approaches. The adult recurrent education voucher legislation is designed specifically to assist a particular target clientele group. Further, it is designed to assist the target clientele group in such a manner that the invested funds will stimulate increased responsiveness on the part of the existing system of adult open learning opportunities. The Educational Opportunity Center Program is another example in which a linkage mechanism is established, permitting clients to utilize a variety of educational services. Pockets of client demand can be aggregated through such a counseling center into a size of aggregate demand adequate for institutions to respond with new programs or courses.

A third approach for implementing open learning derived from this perspective is the approach of voluntary service area planning (cited earlier). Since coercive approaches to try to bring together all the providers of adult open learning services in a given area are doomed to failure at the outset, voluntary approaches are suggested. If the appropriate pattern of incentives is created, most organizations and institutions will, in fact, respond. Hence, the objective of geographic area service planning can be achieved in a manner in which minimum resistance is generated.

Finally, the brokerage approaches to obtaining credit, for example, for proprietary school education through one-to-one linkages between certain proprietary schools and certain degree-granting institutions, and the brokerage approach to linking education capacity with manpower training needs are to be considered. These non-coercive approaches (cited earlier) are based on a natural pattern of incentives. An example of the incentives I'm discussing is the new pool of upper division students a degree-granting institution can serve if it links up with, and accepts credit from, a proprietary school.

Rule 8. Supply (push) initiatives and demand (pull) forms of subsidization and initiatives must both be considered and used selectively, for each is best suited to certain public investment objectives.

Traditionally, in the expansion of education in general and in the expansion of open learning in particular, too much of an emphasis has been placed on the subsidization of supply and the

building of capacity. We have subsidized new institutions, new programs, etc.

Much can be done with demand subsidy initiatives; the voucher proposal in Massachusetts is an example. It is a basically simple and workable idea which, on its own merits, generates considerable support. It is important to recognize that demand and supply initiatives are differentially effective in meeting varied needs and in serving varied clientele. Hence, a mixture of both approaches is optimal. Due to the emphasis in the past few years on supply initiatives, a compensating emphasis on exploring demand initiatives and demand subsidies should be undertaken in the near future.

Demand initiatives have two basic forms. The first is direct subsidy of the consumer of adult open learning services. The second is purchase of service arrangements where the government or some other agency purchases a set of particular services from any of a variety of providers on the behalf of a group of consumers. Note that direct institutional subsidies are not block purchase of service arrangements, but rather capacity building subsidies. The reason they are not block purchase of service arrangements is that typically the services to be provided are not designed and then opened up for competitive bid from a variety of potential providers. Rather, the decision is constrained in advance to a single provider and then that provider is subsidized to provide the services.

Demand subsidies and supply subsidies are each best suited to certain kinds of undertakings. Hence, for the provision of student aid to selected clientele groups, demand subsidy vouchers were clearly shown in our studies to be the policy instrument of choice. Demand subsidy is also important if one of the policy criteria is a design of an open learning initiative to maximize student choice. Supply subsidies, on the other hand, are more suited in other areas, such as in the Educational Opportunity Center Program.

The key point here is that by thinking in terms of the alternatives of demand and supply subsidy, a research and program designer is led to a whole series of new options. Then ways to effect and implement consumer and supplier behavior can be studied. Those effects should be consistent with public priorities and needs. The question in each particular case is, "What mode of subsidy will most effectively achieve that end."

It is clear that the existing system of continuing education and open learning is quite responsive. A variety of adult clientele are served within the adult open learning universe. The needs of most of those clientele are met reasonably well. There are, of course, clientele who are not presently being

served. These, as discussed above, are a priority for social investment, and demand subsidies to this priority target clientele will enable them to overcome the financial barriers to access which they face.

The existing adult open learning universe operates like a market. This is much more true in the area of traditional higher education due to the severe institutional constraints and the peculiarities of the consumer in that sector. When one examines all existing resources and how they are financed, it is clear that the system operates as a market with considerable consumer power since the system is heavily financed by the student charges. The market character can clearly be shown to lead to considerable responsiveness to clientele needs. Hence, demand subsidy intervention strategies play to the strong points and natural tendencies of the existing continuing education system.

Rule 9. Expanded adult open learning services should be planned and developed through an approach which is based on natural geographic service areas as seen from the point of view of consumers.

It can be clearly shown that the use of existing adult continuing and open learning services is heavily geographically determined (with some exceptions such as correspondence programs). The great bulk of students in the adult open learning universe are pursuing their open learning activities within a short commuting distance from their home. Hence, metropolitan areas and smaller cities automatically constitute logical geographic service areas for planning purposes.

A variety of efforts can be undertaken at this service area level to foster integrated and cooperative planning. These include the creation of Service Area Planning Boards, which would consist of representatives from the variety of adult open learning service providers in the service area; the establishment of community-based career counseling and educational information centers; the establishment, through the auspices of the Service Area Planning Board, of Area Recurrent Education Councils, consisting of representatives from the employer community as well as representatives from the client groups and from the providers of recurrent education services; and other area-based initiatives, such as area demand analysis for open learning services in relation to local labor markets, etc.

Several examples of the implications of this geographic service area characteristic of continuing education have been discussed in earlier sections of this paper (principally the Area-Based Educational and Career Counseling Centers).

Rule 10. Expanded adult open learning cannot be "sold" for massive public investment as "open learning" *per se*. Rather, it must be linked to broader high-priority social purposes having a higher social priority than simply "adult education."

These broader social purposes include skills development, retraining of manpower, the use of adult open learning as a vehicle for assisting individuals to develop greater self-sufficiency, and employable skills (thereby removing themselves from the public welfare roles), etc. Open learning *per se* is a worthwhile goal. However, the best way to eventually bring about a social commitment to that goal is through a series of partial commitments related to other social purposes, thereby gradually building the awareness, constituency support, and public priority for expanding adult open learning and recurrent education services.

Some general observations on the 10 points above lead one to conclude that resources can be related to social priorities through a consideration of the role of the consumer and the consumer's point of view. It is precisely by taking a consumer's point of view that the possibilities of adult open learning can most easily and directly be related to social priorities, and a persuasive argument be developed for public support. Further, a gradual, incremental, experimental approach playing to the natural leverage points in the existing system and the natural response patterns of the relevant agencies and constituencies is the most effective strategy. Importantly, this strategy is less threatening to existing vested interests in the education world. As such, it is less likely to generate resistance. But more important, it is an expansive strategy rather than an exclusive strategy.

Hence, rather than a particular innovation's being the province of a particular institution, system, or group of individuals, the innovations become more broadly diffused and become the property of a variety of individuals and institutions. The open learning initiatives are not competitive, they are additive.

Rule 11. Finally, the approach in performing research should be a general and non-directive approach which outlines the parameters of public policy debate, provides the data for intelligent debate, and clearly separates the facts presented for all to use from the particular recommendations and conclusions drawn by the particular researchers.

It is in this way that research and alternative program designs become a tool for effective public policy development in the area of adult open learning.

Moreover, research which leads to a set of separable initiatives which can be implemented independently by a variety of implementors is likely to have a greater impact than that which comes up with a single institutional recommendation, such as a "state open university." In the continuing education master plan study in Massachusetts, the design of the recommendations was such that, while they collectively fit together in a pattern which would significantly expand continuing education and open learning services within the state, the recommendations were to some extent separable. Hence, counseling centers could be implemented independent of the vouchers, and vice versa. Certain other recommendations such as state funding of geographic service area planning, still have not been implemented but may be implemented in the future.

Also, the advantage of this "modular approach" to designing open learning recommendations and initiatives has a political advantage. Often political action is swift and unpredictable. Hence, a given unanticipated political initiative to move in a certain direction—for example, to establish a certain

type of institution for expanding adult open learning—does not necessarily negate the entire research effort undertaken and the recommendations stemming from it. On the contrary, the research results remain usable because the research facts were separated from the recommendation opinions, and because the recommendations are modular rather than unified.

It should be emphasized that the recommendation here for a modular approach to designing various initiatives for expanded adult open learning is not meant to imply that those modular initiatives do not fit together in a larger overall design. Indeed, they should be specifically designed to be complementary, so that if the entire set of modular recommendations is implemented, an overall design which is sensibly conceived and which will be effective will result.

The Massachusetts experience detailed throughout this paper is illustrative of the long-run effectiveness of this approach in actually achieving implementation of open learning innovation in state policy and expenditures.

HOUSE No. 4932

By Representatives Daly of Boston and Gannett of Wayland, petition of Ann C. Gannett and Michael J. Daly for the creation of an adult recurrent education entitlement voucher program to encourage adults of low income and low previous education to re-enter the post-secondary educational system. Education.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Seventy-Five.

AN ACT CREATING THE ADULT RECURRENT EDUCATION ENTITLEMENT VOUCHER PROGRAM.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

- 1 SECTION 1. Definitions:—
- 2 *Adult Recurrent Education Entitlement Voucher Program:* —
- 3 program designed to encourage and enable adults of low income
- 4 and low previous education to re-enter the post secondary
- 5 educational system by offering vouchers to use to take courses in
- 6 certain public, private, proprietary and independent educational
- 7 institutions.
- 8 *Voucher:* — entitlement in name of eligible recipient which
- 9 can be signed over to a participating institution in payment of

10 part or all of the tuition for an extension, continuing education,
11 evening division or other course. Such voucher shall be
12 reimbursable when submitted by a participating institution to
13 the Commonwealth.

14 *Recipient:* —An adult 25 years of age or older who meets the
15 combined income and previous education requirements as
16 specified in rules and regulations promulgated by the Secretary,
17 or his designee.

18 *Previous Education:* —Fewer than four years college course
19 credit.

20 *Participating Institution:* — Any institution meeting the
21 eligibility requirements of the United States Office of Education
22 Federal Student Assistance program.

23 *Secretary:* —Secretary of the Executive Office of Educational
24 Affairs.

Page 2

1 SECTION 2. There is hereby established an Adult Recurrent
2 Education Entitlement Voucher Program, to be administered by
3 the Secretary of the Executive Office of Educational Affairs, or
4 such other appropriate agency as the Secretary may designate.

5 Any recipient qualifying for a voucher in accordance with
6 Section 1 of this Act shall be entitled to said voucher upon filing
7 an application attesting to his eligibility, and shall, subject to
8 appropriation, receive said voucher on a first come, first serve
9 basis.

10 A voucher shall be awarded to recipients to cover tuition
11 costs. Said voucher shall be reimbursable at a rate up to a
12 maximum of fifty dollars per credit hour for no more than two,
13 three-credit courses per semester. In total each recipient shall
14 receive vouchers entitling them to no more than thirty-two
15 courses, the equivalent of four years of college or a bachelor's
16 degree, whichever comes first. The voucher size shall vary in
17 amount from partial to full tuition, as a function of both the
18 recipient's income and previous education. The level of payment
19 of the voucher shall decrease as the recipient completes courses
20 or utilizes the vouchers under this program, or as his or her
21 income and previous education may change.

22 In any case, where the tuition charge at a participating
23 institution exceeds the amount of the voucher, it shall be the
24 responsibility of the recipient to pay that difference to the
25 participating institution.

1 SECTION 3. The Secretary, or such agency as he may
2 designate, in accordance with Section 1 of this Act, shall be
3 responsible for the distribution of said vouchers in accordance
4 with this act. Further, the Secretary or his designee, shall
5 promulgate rules and regulations establishing the criteria for
6 eligibility and shall develop such formulae and other standards
7 and rules as are necessary to determine the actual amount of

- 8 each voucher to be awarded to recipients according to the
9 guidelines set forth in Section 2.
- 10 The Secretary, or his designee, may accept any grants, gifts or
11 other awards which may be used for the purposes of this
12 program. Further, the Secretary shall publicize the program
13 throughout the Commonwealth.

Page 3

1 SECTION 4. The Secretary, or such agency as he may
2 designate, shall annually audit five percent of the applications
3 for which voucher awards were made. A report containing the
4 findings of the audits shall be submitted to the Committee of
5 Education.

1 SECTION 5. Any person who, in applying for and receiving
2 a voucher, is found to have misrepresented any information on
3 the eligibility form shall be subject to a fine of not more than
4 one thousand dollars.

Figure 1: Education voucher bill pending

Part II: Summary of Two Program Initiatives in Massachusetts

Two state open learning initiatives in Massachusetts, which have met with success over the last three years and have been referred to throughout this paper as illustrative of the rules discussed, are summarized in this section.

1. Adult Recurrent Education Entitlement Voucher Program. House Bill 14932, which embodies the adult recurrent education entitlement voucher proposal, resulted from a 1973 statewide continuing education master planning study. Subsequently it was discussed for a year through the Governor's Task Force on the Open University, and subsequently introduced as a bill in the Massachusetts Legislature.

Space here does not permit a detailed discussion of the actual operation of the voucher program as proposed, but several key factors will be reviewed. More important to the theme of this paper however, are the lessons learned in the process by which this idea developed from a concept derived from a research study through the public policy implementation process to the point of pending legislation.

In brief, the adult recurrent education entitlement voucher program is designed to operate as a selective entitlement to focus aid on adults of low income and low previous education. This dual contingency is applied by means of a rationing scheme which gives graduated voucher awards focusing

most aid on those most in need, but at the same time providing some aid to the hard-pressed middle class. The program is carefully designed to supplement and not replace existing private resources being invested in continuing education and open learning. It is specifically geared to part-time study (as such it is awarded on a per course or course equivalent basis), as is most consistent with the typical pattern of adult pursuit of continuing and recurrent education. It contains a unique and simple way to control cheating, doing away with the complicated advance needs test and replacing it with a simple post audit.

This program can be viewed as a solution to a specifically defined problem in continuing education, namely the difficulty of access for low-income and low previous education adults. It was conceived to serve in a complementary fashion to the Community-Based Educational and Career Counseling Centers program, with the former helping individuals of low income and low previous education to overcome financial obstacles while the latter assisted them in overcoming other obstacles associated with continuing education.

However, the program may also be seen as part of a broader conception involving selective entitlements, tax credits for employers (as recommended originally in the continuing education master plan study), and perhaps a series of other financial initiatives. It represents a demand subsidy in contrast to the supply subsidy advocated and implemented for the Community-Based Educational and Career Counseling Centers.

While the program could be the first step in trying out a general entitlement program for a broader spectrum of adult clienteles it is not specifically intended to be so. There are severe problems with general entitlement approaches which must be resolved theoretically before even experimentation with such approaches can proceed. They include such weaknesses as transfer of subsidies from low-income taxpayers to high-income users continuing education, substitution of public funds for existing private investment, etc. The Selective Entitlement approach embodied in this legislation is not appropriate.

2. Pilot State Program of Community Based Educational and Career Counseling and Referral Centers to Provide Access to Open Learning for Adults. The Regional Education Opportunities Center (REOC) program in Massachusetts is a program of community-based counseling and referral centers for nontraditional adult learners. The REOC program was designed to be a new way of serving the disadvantaged by being (1) community-based; (2) client rather than institution-centered; (3) post-secondary rather than only higher education in orientation; (4) geographic service area focused.

Several important facts about this program should be noted consistent with the rules for implementing open learning presented earlier in this paper. First, this program was started in early 1973 not as an "educational innovation" *per se*, but rather as an attempt to assist the welfare population in the state. The program was started with state money as a vehicle to aid welfare recipients, to utilize the educational opportunities available in their locality, to improve their employability and well-being. The program was established on a trial basis and, like all new programs, encountered some difficulties in getting started to the point of smooth and continuous operation.

Second, the program was deliberately set up on a pilot basis with five different modes of site operation being tried in five different localities around the state. A continuous formative evaluation was initiated, and refinements and adjustments in the program were made over a two-year period.

Third, in 1975 the program, having survived the change in state administration, was given a new impetus with expanded state office staffing and an expanded mission for the centers. Additional sites were also opened.

Fourth, the concept behind these Centers is distinctly different from the broad "learning center" concept advocated in much of the open learning literature. Importantly, among the services of these Centers, the only instruction is some remedial and tutorial work. The Centers are not conceived as adjuncts of educational institutions (be they tradit-

tional or nontraditional), nor are they a part of a particular nontraditional program. Rather they are specifically intended to be community-based centers where an adult can go and obtain information and a variety of other services, including some advocacy vis-a-vis the educational institutions in the area. While the centers may eventually become sites for the administration of financial aid, it is unlikely they will ever assume and extract instructional mission competitive with educational institutions. This is true for two reasons: (1) proposals for such learning centers with instructional missions of various forms have not met favor within the state, and (2) a vast array of educational resources in the state of Massachusetts exist within commuting distance for most adults.

The functions performed at each REOC site include outreach, intake, dissemination of information on academic and financial assistance, educational and career counseling, testing, financial aid counseling and application assistance, tutoring and supporting services for clients enrolled in post-secondary institutions, referrals to other service agencies (manpower and social service), clearing house for educational opportunities, and followup to facilitate placement of clients in educational programs and institutions.

The program is statewide although the sites have different sponsoring organizations: consortia of colleges and universities, individual colleges, and community action agencies. The program has several funding sources. The initial proposal¹⁵ utilized state appropriated funds targeted for services to welfare recipients, subsequently federal funds were added.

The concept of a statewide Regional Educational Opportunity Center program was further developed in a state adult and continuing education master plan study which recommended that REOC's be a key mechanism to assure equal educational opportunities.¹⁶ It was recommended that 13 Service Area Planning Boards be established to coordinate area-based planning for part-time and continuing post-secondary education in Massachusetts. One of the functions of the SAPB's would be the operation of cooperative REOC's to provide the necessary and essential outreach and counseling for disadvantaged students and potential students. It is obvious that persons of low income and low previous educational attainment, and minority groups, are under-represented in current student clientele in relation to their proportion of the total population. REOC's would be a key method of assuring access to the post-secondary education system for all elements of the population.

The Governor's Task Force on the Open University suggested a different model, arguing that the

program be reoriented and the sites be expanded into learning centers offering a broader range of educational services. To date the original model has been retained with geographic expansion to new areas in the state.¹⁷

The pilot REOC's were reactivated in the spring of 1974, and in July of that year the U.S. Office of Education began funding the program with a demonstration grant as a result of a statewide proposal submitted by the Executive Office of Educational Affairs.¹⁸

Over the past two years Massachusetts has made significant progress in refining the design and operation of the pilot Regional Educational Opportunity Center Program.

Since one of the most important goals of the REOC program is to reduce the barriers and obstacles faced by the adult population who wish to continue their education, it is recommended that access studies be conducted to assess the demand for post-secondary education and to analyze the obstacles to study. The data generated by these studies would also provide an understanding of the preferences within the adult population for counseling and instructional services. Another major purpose of an access study of this type is to develop information on the preferences of the adult public for the location, affiliation, and services of a counseling center.

The program in Massachusetts has been responsive to the social goal of access primarily for disadvantaged adults. Limited resources have been focused on six areas in the state which have high concentrations of low income population. Studies in Massachusetts had shown that adults in the low income and lower previous education groups have a high desire to continue their education, but have had very low current participation rates.

Some barriers are reduced by providing outreach information and counseling services to the adult public, but the real challenge is to relate to and coordinate all providers of post-secondary education (including adult basic education programs, public and private vocational training schools, unions, and employers who are offering training and education, as well as college continuing education programs) for the purpose of making the necessary modifications to meet previously unmet needs of the nontraditional client, particularly the adult of low income and low previous education.

Information on the distribution of demand for post-secondary education amongst the various target populations and on the proportion of these aspirants who are unable to continue due to perceived obstacles are needed in any planning efforts.

targeted at the reduction of inequality of educational opportunity.

The experience of Massachusetts has been documented,¹⁹ revealing a number of issues that should be considered by any state contemplating a program of community-based counseling and referral centers for nontraditional adult learners:

Planning, management, and technical assistance

- setting priorities,
- setting specific objectives,
- developing strategies for outreach,
- developing counseling strategies,
- management planning,
- evaluation.

Consolidated client information system

- standardized format,
- demographic profile on each site population,
- uniform intake system,
- standardized follow-up questionnaires.

Outreach

- utilize available information on adult access to post-secondary education,
- develop outreach objectives stated in terms of specific strategies and target groups,
- aggregate source of contact information to assess outreach strategies..

Educational linkages

- develop the kinds of information on client learning needs to enable post-secondary institutions to accommodate nontraditional learners,
- establish linkages with post-secondary education counseling systems and develop more systematized and cooperative approaches to the follow-up process.

Services

- establish a hot line for educational and career information dissemination,
- develop career exploration workshops,
- facilitate the translation of career choices into educational programs,
- contract with other providers for certain services,
- provide continuing counseling support to pre-post-secondary clients beyond referral,
- sites should advertise and coordinate services offered by others rather than exclusively providing direct services.

Staff

- staff composition should be representative of the community including both professionals and paraprofessionals,

- staff should include people with educational planning training as well as counseling and social service backgrounds,
- staff training programs should be developed.

Funding

- financial support should be provided by broadly based group organizations within each region as well as state and federal sources,
- site sponsors should be designated grantees.

Organization and management

- the sponsoring agency for each site should coordinate the planning of the post-secondary

institutions in the region to provide for the previously unmet needs of the population as well as support functions such as personnel and bookkeeping,

- the site coordinators should be directly responsible to the project director in the central office,
- the central office should be responsible for conducting access studies and support and encourage the utilization of this information in regionalized, consortia-based, post-secondary education coordination and planning.

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Use of Formative Evaluation in Course Development

**Edward Palmer
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We in the business of developing new educational course materials are living through a time profound in the re-examination of our traditional approaches to the motivation of learning. The Calvinistic ethic of our forefathers places the responsibility for the individual student's progress exclusively in the student's own hands. His failure to learn is his own failure to learn. Culpability is assigned, and punishment is wielded out accordingly. Today, if a learner falls short of our expectations, we're far more inclined to look for the fault within what we call "the system." If the motivation does not exist within the learner, or if it is considered too time-consuming or inefficient, we now work at building into the presentational materials the wherewithall to guide the learner along.

There are other reasons for improving the design of educational materials, of course. For one thing, improvement can make learning easier.

For another, we no longer tend to insist that only hard-won learning is valuable learning. And a new design can help us to cater to individual learning styles.

In a brief paper published in 1967, Michael Scriven introduced the distinction between the two terms, formative and summative evaluation. The terms, by now, appear to have achieved permanent status in the lexicon of the educational research community. Their clarity of meaning as originally defined and their usefulness have been questioned from time to time, but not seriously enough to undermine their persistent widespread use.

Formative evaluation refers to empirical testing of educational processes or educational products while they're still under development. The results usually lead to revisions in practices and materials before they are produced in final form and made widely available for use.

Summative evaluation studies, by contrast, are designed to assess how well the finished work performs when put into actual practice.

My purpose is to point out some of the many potentially useful functions which formative evaluations can serve. Awareness of these may be useful to researchers, project directors, and project backers in deciding, for this relatively new type of activity, whether or not it should be a part of a given project; what potential useful role or roles it can fulfill; and what amount of project resources should be allocated to it.

Decisions about the relative value of formative evaluation and the allocation of personnel and material resources, therefore, must hinge upon an assessment of the functions it can serve. Following are an enumeration of and brief description of 11 of the more significant of these functions.

The first function is identification of the subject matter content of the course. I think it's very clear that, as we select the content of the course, we should select it with some reference to the learners, and often times that should be some empirical reference to the learners. For example, someone pointed out to me that many presentations on birth control use terms that the audience members can't understand. I think the terms used, and lexicon used in the instructional presentation, are part of the content.

The second function is to define, in precise and unambiguous terms, the informational, behavioral, attitudinal, and other objectives of the course. It's very easy, when you're designing the objectives of the course, to leave the definition of those objectives in very vague terms, to assume that two people using the same set of general terms are talking

about the same specifics. Often, when the materials are under development and you look at the construal of different individuals of what you've been talking about all this time, there are some surprises. That can be avoided if the objectives are defined very clearly and precisely and in considerable detail at the outset.

The third function is to identify the levels of skill and knowledge possessed by the enrollees upon entry into the course. This is not so much to decide who gets into the course and who does not get into the course, as it is to decide at what level to pitch the instructional materials.

The fourth is to insure that the members of the production staff possess a thorough knowledge of the subject matter of the course. One of the functions of formative research is a training one. At the workshop we call it "giving the producers the bath in the curriculum," making sure that they understand the nuances of what is known about a field, among the professionals who are the keepers of that field.

A fifth function is to provide information for the revision of products and procedures during the creative phase of their development. This, of course, is the key and focal function of formative evaluation, to provide direct information on prototypic materials, so information can feed back into decisions about product revision.

The sixth function is to help identify the most suitable time for undertaking a major follow-up evaluation or summative evaluation. I think that one of the most destructive things that can happen to a project is for it to be forced prematurely to show evidence of its effects on an audience. I don't think we've given quite enough attention to the great amount of care and time that it can take to create effective materials for instruction. I think we're always forced by backers to let them know how well things work. With formative evaluation, you can forestall a premature summative evaluation. Even though the formative evaluation results have been obtained in-house and might be construed as self-serving or potentially biased, an intelligent group of backers, with reviewers, can sort through and can make good use of the material.

I'm afraid that I tend to sound somewhat in an adversary position with backers. That's not the case with enlightened projects and enlightened backers. You are in the business together.

The seventh function is to develop and try out summative evaluation methods and procedures. Very often, when a project is breaking new ground, there will not be tests available on the shelf for evaluating the effects of the materials being pro-

duced. Since the formative evaluation group knows what those objectives are better than any body else, inasmuch as they are defining those objectives in detailed terms, they are in a very good position to develop prototype tests, and those tests often can be used in summative evaluations later. Or, it may be that tests are not appropriate, but that methods of measuring appeal, or methods of measuring the persistence of students in returning to the course, etc. are.

Item eight is to provide for the gradual accumulation of summative evidence. I do not believe in one-shot summative evaluation work for most projects. The evaluation process is a more fluid process, as I see it. For example, one might test some of the objectives of the program at one time and other objectives at another time. As a course is being developed it could be that you want to devote all your attention to certain prior objectives and to their attainment because only with success on those can the learner move on to another phase, like to Primer No. 2 of a sequence of primers. It may be that you want to give all your attention at one stage to only one part of the product.

I think, also, that summative evaluation—for most purposes, for most complicated applied circumstances—is not carried out as scientifically as we'd like. We would like to set up carefully controlled studies. We'd like to have learners who receive one treatment and some learners of exactly the same sort receiving no treatment or another treatment. But in a real world it's very difficult to achieve that kind of condition. So what we usually do is to converge on the truth after a series of studies and observations, rather than locating it all at once.

I strongly advocate what I call an incremental approach to summative evaluation.

Item nine is what I call the documentation function of formative evaluation. That is to provide a record of the purpose, the nature, and the value of various presentational approaches tried. This historical record can be very useful for later stages of

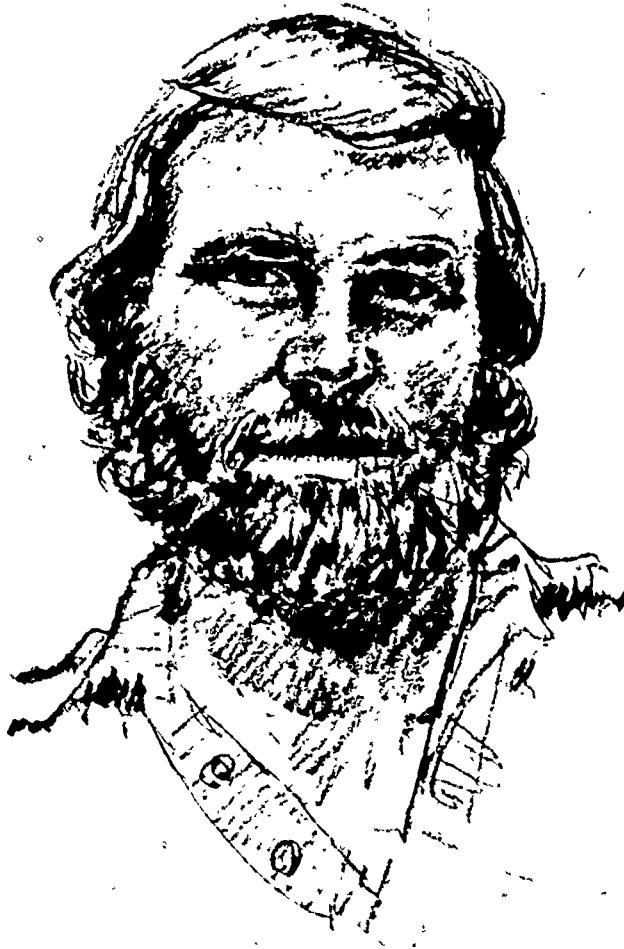
the project, or for other people who are going to be involved in similar ventures. It can be useful, that is, if there is a very precise and detailed record of what was tested, what was looked for in the testing, what the results were, and what revisions were made as a result of the testing.

Item 10 is to develop models and methods of formative evaluation which may be useful in other contexts. That simply means that the formative researcher is a professional person. He is a member of a community of scholars in his particular field, and whatever he learns he shares with those scholars. And students, of course, will be the ultimate benefactors.

The final function is to provide personnel training in the procedures of formative research and evaluation, so as always to have a new cadre of practitioners coming along.

These 11 functions, in my view, make up the role of formative evaluation on a project. When a team of formative evaluators is associated with a project, these functions comprise their chief responsibilities. However, these are not necessarily the only functions performed by such a team. Formative evaluators may also participate in additional activities, such as commissioning of third-party summative evaluations. They may be involved in the development of instructional theory. They may be involved in the dissemination of information about the project to interested members of the professional community. And, of course, there could be many other activities.

I believe that formative evaluation is an important part of the new approach to the motivation of learning. Its focus is not at all on the testing of learners in order to establish their strengths and weaknesses, but rather on the testing of our new educational practices and products to determine their strengths and their weaknesses. We've just begun to learn how to do this type of evaluation. We have quite a lot to learn.



Jack Lindquist



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Faculty Development for Open Learning and Nontraditional Study

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Faculty development is all the rage these days. Competitive pressures, "tenured-in" faculty, new educational technology and methods, simply a desire to improve: these are a few of the reasons that individual faculty members and their institutions are busy establishing teaching improvement centers, joining inter-institutional professional development projects, formulating new ways to evaluate faculty, changing educational programs or faculty-administrative relationships.¹

These new programs can be instructive to nontraditional institutions. In both conventional and unconventional settings, it is a new organizational function which represents a partial shift in money and energy from developing an institution through recruitment of scholars to development by helping current faculty members to become more knowledgeable and skillful, especially as teachers. In both settings, faculty development raises the

disturbing notion that somebody thinks I'm not doing perfectly and is out to change me. In both settings, faculty development is a new idea which is learning as it goes. We will try in this essay, therefore, to share some strategies for launching faculty development in any institution or program.² But we are particularly concerned with exploring the meaning of faculty development in nontraditional settings. That is where we will begin.

Faculty Development for Extended Degree Programs

Let's accept the term Medsker and his associates use for open learning or nontraditional study. They call it "extended degree programs...with policies and procedures which enhance convenience and appeal and with content of interest to students who are usually beyond what has been considered the conventional college age."³ Not a snappy phrase to coin, but an apt description. The Medsker group classifies extended degree programs into four categories. "Extended-campus" programs use conventional classroom study but are more flexible than traditional programs in their scheduling, location, and requirements. Continuing education falls in this category. Faculty development would include increasing skills in classroom teaching, and it might focus on how to give continuing education teaching the time and rewards necessary for it to be more substantial than the eight p.m. version of an eight a.m. lecture.

A second, extended degree category is the "liberal studies/adult degree," which alternates independent study and short, intensive residency seminars. Clearly, some help to faculty regarding how to guide and evaluate independently-learned liberal education and how to conduct seminars in an intensive workshop setting would pay off in these programs.

The third category, "individualized study approach," employs learning contracts which outline learning objectives, activities, and evaluation criteria/methods. Contracts might include independent study, traditional courses, work, intern or field experiences, tutors, pre-packaged learning "modules," and museum or public library work. Faculty development for developing learning contracts, for one-to-one instruction, for linking students to community resources, for counseling and facilitating, for evaluating contract learning as well as prior learning: faculty development for all these and more are needed in such programs. Finally, "degree-by-examination" faculty need help in constructing and evaluating standardized tests.

All of these faculty roles need a couple of other aids: (1) increased understanding of adult learning

and development, and (2) a career advancement system to compete with the powerful pull of the traditional disciplines and their academic departments. Chickering has synthesized much adult development literature into a few consistent stages of intellectual and personal growth.⁴ These studies not only address the learning approaches and needs of adult students. They are basic materials for understanding faculty members and their professional styles. As for career advancement, it is critical to the continuation of talented faculty members in any of the four models that they become first-class post-secondary citizens with passports to exciting new opportunities. Otherwise, burn out and pull out will become trademarks of extended degree program faculty.

Getting Started

Because faculty development for nontraditional settings is so new, most of us are just getting started. We need to know what it takes to get a faculty development program going and to get faculty members into it.

Our experience so far suggests that a faculty member or program needs good information about what is happening to students. He needs an advocate group to push change through and a support group to keep his own commitment high when problems occur. He needs support at the top of the institution and needs to maintain close contact with folks up there. He needs linkage to external expertise and practices elsewhere. He needs time out for self-examination and training. He needs to maintain a student-orientation if improved learning is a key faculty development objective. He needs to foster faculty ownership of the development. He needs to start with interested people but slowly establish personal rapport with and interest among more cautious or skeptical individuals. He needs to have clear objectives and a concrete action plan with responsibilities and deadlines stated. He needs to tap outside dollar and consultant resources to build an adequate and skillful program of development. He needs to impact not just individuals but program units and the institution as a whole, especially its reward system. It is a tall order. But it can and perhaps must be done if extended degree programs are to live up to their promise.

Particular Issues for Faculty Development in Extended Degree Programs

With support from the Danforth Foundation and leadership by Tom Clark, Empire State College recently opened the **Center for Individualized Education**.⁵ Its principal objective is to aid faculty development in extended degree programs. The Community College of Vermont, New College at

the University of Alabama, University College at the University of Minnesota, Bunker Hill Community College, Minnesota Metropolitan State College, Rockland Community College, and the State University of New York College at Brockport each have a faculty development team working with the Center. Their initial project is to clarify the roles required of an individualized education faculty member, determine what skills are needed for those roles, and then work out ways to help faculty members gain those skills. The complex roles and skills needed for teaching individualized education, therefore, constitute one critical professional development issue which nontraditional faculty members themselves identify. Some of those roles, according to team members, are (1) facilitator/counselor, (2) broker, (3) instructor/tutor, (4) evaluator, (5) administrator for tutors and other learning resources or paperwork, (6) creator and user of instructional materials and media, (7) degree program planner, and (8) evaluator.

Team members also identified a number of questions which need answering. How do we evaluate prior learning, field experience, or other nontraditional learning? How do we help students become self-directed learners? How do we help students take initiative in finding their own learning resources? How do we set up a learning resources "bank"? How do we train community resource people to be better instructors? How do we effectively serve populations which are not usually reached by post-secondary education? How do we combine high and consistent standards with individual flexibility? How do we make narrative evaluations acceptable and useful to students and to graduate schools, potential employers, credentialing agencies, and accreditation teams? How do we relate with more traditional academicians? How do we survive crushing workloads?

In order to begin answering these and other questions, the Center will not only study individualized educator roles and skills but will set up a clearinghouse of information on individualized education, will study the characteristics, objectives, styles, and skills of nontraditional learners, and will look closely at the problem of evaluation. Part of the clearinghouse function, incidentally, will be to begin to establish a network by which career opportunities for individualized education faculty can be identified and connections can be made.

Several problems not listed in the first workshop of this center also deserve attention. One is how can I keep up in my field when I am isolated from disciplinary colleagues and flat out trying to keep up with other demands? Another is how can I get a grip on the long hours it takes to do the paperwork required of individualized education and the committee work required to develop a new program? A third is how can I effectively help students who are not in my discipline?

Clearly, the range of unresolved development issues facing the extended degree program faculty member is wide and important. This brief paper only can signal those issues and suggest some general strategies for beginning to tackle them. If such centers as Empire State's and Virginia Commonwealth's, along with the many others springing up these days, penetrate these issues and begin finding answers, nontraditional post-secondary education should be significantly stronger. But perhaps most critical is the start you make in your institution to give extended degree program faculty the help they need and deserve to make adult learning a rich and life-long experience for both learners and faculty members.

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